

**CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER NO. 00-131

NPDES PERMIT NO. CA0037966

**CITY OF CALISTOGA, WASTEWATER TREATMENT PLANT,
NAPA COUNTY**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER NO. 00-131**NPDES PERMIT NO. CA0037966****WASTE DISCHARGE REQUIREMENTS FOR:
CITY OF CALISTOGA, NAPA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. **Discharger and Permit Application.** The City of Calistoga (hereinafter also called the Discharger or the City) submitted an application for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).
2. **Discharger Location and Description.** The City of Calistoga is located in Napa County, in northern Napa Valley, at the junction of State Highways 29 and 128. The City is located about 25 miles northwest of the City of Napa, and about 40 miles north of the north shore of San Pablo Bay. The City has a current population of about 4,800. The City encompasses roughly 2.5 square miles of land, mostly in the generally level, gently sloping floor of the Napa Valley between 340 and 380 feet elevation above sea level. Along the southwest boundary, the City area extends partly up the valley slopes to elevations of 800 feet. The Napa River traverses the City in a northwest-southeast direction, with development on both sides of the river. Tributaries to the river within the city area include: Blossom Creek and Cyrus Creek from the southwest and Garnett Creek from the north. The climate in this area is characterized by warm, dry summers and cool, moist winters. Annual average precipitation is about 45 inches, occurring primarily during the period of October through April.
3. **Discharge Facility.** The Discharger owns and operates the Dunaweal Wastewater Treatment Plant (treatment plant) which provides tertiary-level treatment of municipal wastewater from domestic and commercial sources within the City of Calistoga. The treatment plant is located about two miles south of city center, on the eastern bank of the Napa River, to the north of Dunaweal Lane.
4. **Discharge to Surface Waters.** During the wet weather period of October through May, treated effluent is discharged intermittently to the Napa River, a water of the State and of the United States, provided the discharge receives adequate river-to-wastewater dilution (at least 10:1).
5. **Point of Discharge.** Treated effluent is discharged to a non-tidal reach of the Napa River through two submerged outfalls extending from the eastern bank of the river, both located at 38° 33' 34" North Latitude, and 122° 33' 28" West Longitude. Outfall E-1 is used for discharge of tertiary-treated effluent, with a river to wastewater dilution of at least 10:1, or for discharge of secondary-treated effluent, with a river to wastewater dilution of at least 50:1. Outfall E-2 is used only for discharge of secondary-treated effluent, with a river to wastewater dilution of at least 50:1.
6. **Existing Permit.** The discharge of treated wastewater to the Napa River is governed by NPDES Permit No. CA0037966, currently in the form of Waste Discharge Requirements in Order No. 92-062 adopted by the Board on June 17, 1992. The reissuance of this NPDES permit is the subject of this Order.
7. **Discharges to Land.** During the dry weather season, May through September, discharge to the Napa River is prohibited and treated effluent is either stored in wastewater ponds, or disposed to land through a

reclamation program. Reclaimed water discharges to land are governed by Water Reclamation Requirements in a separate Order, currently Order No. 88-060 adopted by the Board on April 20, 1988.

8. **Collection System and Pump Stations.** The discharger's wastewater collection system includes 12.7 miles of major sanitary sewer lines and various pump stations. The discharger is in the process of developing a program for preventative maintenance and capital improvements in order to ensure adequate capacity and reliability of the collection system.
9. **Treatment Plant Facility.** The Discharger is in the process of implementing a major upgrade to the wastewater treatment plant. The existing plant is presently in service, and will continue to be in use until completion of the new facilities. New facilities will be constructed at the existing plant site. In this Order, both the existing plant and the new plant are described and requirements are included for both plants.
10. **Treatment Plant and Discharge Flows.** Influent flows over the past five years have been at an annual average of 0.92 mgd, and 3-month dry weather average of 0.67 mgd. Effluent flows to the Napa River over the past five years have averaged about 180 million gallons per year, over about 200 discharge days per calendar year. Influent and effluent wastewater flows for 1995 through 1999 are summarized below:

Year	Influent Volume (MG)	DWADF (mgd)	Effluent Discharged to Napa River (MG)	Effluent Discharged to Land (MG)	Total Volume of Effluent Discharged (MG)
1995	356	0.66	191	123	314
1996	327	0.68	180	118	298
1997	317	0.69	147	122	269
1998	363	0.67	242	106	348
1999	308	0.66	147	133	280
Average	334	0.67	181	121	302

[DWADF = 3-month Dry Weather ADF, for July, Aug. & Sept.]

Treatment Process Description – Existing Plant

11. **Treatment Plant Capacity:** The Discharger's treatment plant has a current permitted treatment flow capacity of 0.70 million gallons per day (mgd), based on a 3-month dry weather average daily flow (DWADF). The plant design flows are: 0.8 mgd Average Wet Weather Flow; 1.0 mgd Peak Wet Weather Flow.
12. **Treatment Process:** The treatment process currently includes a headworks; primary clarification; secondary treatment by two oxidation ponds; tertiary treatment by coagulation, clarification and filtration; disinfection; and disposal either to reclamation or to the Napa River. Descriptions of these facilities are given below. A map of the facilities is included as an Attachment A of this Order.
13. **Headworks & Primary Treatment:**
Wastewater from the collection system enters the plant above grade via an 18-inch diameter gravity main, and discharges into an open-air headworks channel. The headworks channel is equipped with a two debris cutters in parallel, pH and influent sampling, and flow monitoring. Influent flow is measured by a 9-inch Parshall flume and sonic water level detector with reliable measurement up to two mgd, and peak capacity of about 4 mgd. The wastewater then flows by gravity to a single 35-foot diameter, 10-foot deep primary clarifier. Primary clarifier effluent flows by gravity to the oxidation ponds.
14. **Secondary Treatment Oxidation Ponds:**

Flow typically enters Pond 1, at the north end of the pond, and overflows at the south end by gravity to Pond 2. Pond 1 is equipped with four 10-horsepower mechanical aerators. Flow from the primary clarifier can also be routed into Pond 2 directly, if necessary. Pond effluent is withdrawn from the south end of Pond 2, and then typically pumped to the tertiary treatment facilities.

If adequate dilution is available, secondary treated effluent from Pond 2 may be discharged to the Napa River. In this case, pond effluent first flows through the Pond 2 disinfection process which consists of sodium hypochlorite injection, contact in a 1200-foot long 24 inch diameter pipe located at the bottom of the pond, dechlorination by sodium bisulfite, and final effluent sampling and flow measurement prior to discharge to the Napa River through outfall E-2.

15. **Pond Characteristics:** The physical characteristics of the ponds are tabulated below:

<u>Pond No.</u>	<u>Pond Type</u>	<u>Surface Area (Acres)</u>	<u>Depth (Feet)</u>	<u>Volume (Ac-Ft)</u>	<u>Volume (MG)</u>
1.	Oxidation	4.8	5	24.0	7.82
2.	Oxidation	4.0	4	16.0	5.21
Totals ----->		8.8		40.0	13.03

16. **Tertiary Treatment:** Tertiary facilities include alum addition; flocculation in an 8-foot square tank; final clarification in a 35-foot diameter clarifier; filtration in two 8-foot diameter, 20-foot long multi-media pressure filters; pH adjustment as necessary by caustic soda addition; disinfection by sodium hypochlorite in an above-ground circular steel tank; and dechlorination by sodium bisulfite. Final effluent is monitored for pH, turbidity and flow, and sampled for laboratory analyses prior to discharge either by gravity to the Napa River through outfall E-1, or by pumping to reclamation project sites.
17. **Wastewater Solids:** Settled grit is removed from the headworks by a screw-type conveyor, and deposited to bins for off-site disposal. Primary clarifier sludge is pumped to the anaerobic digester for stabilization. Digested solids are dewatered and dried in one of three under-drained on-site sludge drying units. Dried solids are stockpiled in on-site earthen sludge storage beds, and ultimately removed for off-site disposal at an authorized disposal facility. Solids from the final clarifier are either returned to the primary clarifier, or discharged to a small aeration pond for aerobic digestion and subsequent drying in the sludge drying units.

Treatment Process Description – New Plant

18. **Purpose.** The Discharger is currently implementing modification and improvement of its wastewater treatment facilities. The purpose of the improvements is to ensure continued adequate and reliable treatment and management of current and anticipated future wastewater flows. The existing wastewater flows exceed the permitted average dry weather capacity of the existing facilities, and existing facilities do not meet Department of Health Services Title 22 water reclamation requirements.
19. **New Plant and Process.** The project includes replacement of existing older equipment and process units, and construction of new facilities. The new plant will use an extended aeration activated sludge treatment process for primary and secondary treatment, replacing the existing primary clarification and facultative lagoon (aka oxidation pond) system. The new process requires less land area than the existing pond system, allowing conversion of existing ponds for use as effluent storage and flow equalization. The new plant will continue to include tertiary filtration and disinfection processes. The new plant will continue to provide tertiary quality effluent for reuse by disposal to land in the dry season and discharge to the Napa River in the wet season. Discharges to the Napa River will continue to include tertiary treated effluent when dilution of at least 10:1 is available.

20. **New Process Units.** The new treatment plant project includes construction of the following:
- o Modification of the headworks, including construction of new mechanical screen;
 - o Influent flow equalization basin;
 - o Extended aeration basins;
 - o Secondary clarifiers;
 - o Intermediate lift station (filter feed pumps);
 - o Tertiary filters;
 - o Chlorine contact basin;
 - o Effluent storage reservoir;

21. **Design Capacities:**

The design capacities for the new treatment plant are as follows:

Average Dry Weather Design Flow:	0.84	million gallons per day (mgd)
Average Wet Weather Flow:	2.00	mgd
Peak Wet Weather Flow:	4.00	mgd
Influent BOD Loading:	1751	pounds per day (lbs/day) (794 kg/day)
Influent TSS Loading:	2452	lbs/day (1113 kg/day)
Design year (10-year reserve capacity):		2010
Design Population:		5,802

22. **New Permitted Treatment Plant Flow Capacity**

The new treatment plant will have a design average dry weather flow capacity of 0.84 mgd. This Permit allows an increase in the permitted dry weather flow capacity from the existing level of 0.70 mgd to 0.84 mgd. This approval for a new permitted treatment plant capacity is conditioned upon completion of the proposed new treatment plant facilities in accordance with proposed designs, and documentation of treatment plant hydraulic and organic loading capacities by stress-testing of completed facilities. Tasks to be completed in order for the new permitted treatment plant capacity to become effective are identified in the Provisions of this Order.

23. **Environmental Impact of New Wastewater Treatment Plant**

The facility conducted an environmental review of the proposed wastewater treatment plant expansion. (Draft Environmental Impact Report, Nichols-Berman Environmental Planning, April 1998). The EIR concludes that the environmentally superior alternative is the construction of the on-site wastewater treatment plant on facility grounds and avoiding the sensitive neighboring Frediani property. The EIR examines the no development option, using additional irrigation areas in lieu of an expanded treatment plant, and alternative sites for the reclamation pond, in addition to the preferred alternative.

Basis of Effluent Limits and Discharge Requirements

24. **Basin Plan.** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) on July 20, 1995 and by the State Office of Administrative Law on November 13, 1995.

The Basin Plan identifies beneficial uses and water quality objectives for waters of the state in the Region, including surface waters and ground waters. The Basin Plan also identifies discharge prohibitions and effluent limitations intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

State Implementation Plan (SIP) and California Toxics Rule The State Water Resources Control Board (SWRCB) adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (also known as the State Implementation Plan or SIP) on March 2, 2000 and became effective on May 1, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act. This policy also establishes the following: implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxics Rule (NTR) and through the California Toxics Rule (CTR) and for priority pollutant objectives established by Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans); monitoring requirements for 2, 3, 7, 8 -TCDD equivalents; and chronic toxicity control provisions. The CTR became effective on May 18, 2000.

Regional Monitoring Plan On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of California Water Code Section 13267, to report on the water quality of the estuary. These permit holders, including the discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. This Permit specifies that the discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP have been referenced elsewhere in this Permit. The dischargers, through participation in new RMP special or pilot or equivalent studies, are required to investigate alternative analytical procedures that result in lower detection limits.

303(d) Listed Pollutants On May 12, 1999, USEPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act implementation to identify specific water bodies where water quality standards are not expected to be met after of technology-based effluent limitations on point sources. The Napa River is tributary to San Pablo Bay and both are listed as impaired water bodies on the 303(d) list. The listed pollutants for impairing San Pablo Bay are identified as chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, exotic species, mercury, nickel, PCB total, dioxin and dioxin-like PCBs, and selenium. The listed pollutants for impairing the Napa River are identified as sediment, pathogens and nutrients.

25. **Receiving Waters.** The receiving waters for the subject regulated discharges are the waters of the Napa River. The Napa River in the vicinity of the discharge is a non-tidally influenced, fresh water environment.
26. **Beneficial Uses.** The beneficial uses of the Napa River identified in the Basin Plan, in the vicinity of the discharge, include the following:
- a. Municipal and Domestic Water Supply
 - b. Agricultural Water Supply
 - c. Navigation
 - d. Contact and Non-Contact Water Recreation
 - e. Warm and Cold Fresh Water Habitat
 - f. Wildlife Habitat
 - g. Preservation of Rare and Endangered Species
 - h. Fish Migration and Spawning

27. **Water Quality Objectives and Effluent Limits.** WQOs and effluent limitations in this permit are based on the State Water Resources Control Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP); the plans, policies and water quality objectives and criteria of the 1995 Basin Plan, California Toxics Rule (Federal Register Volume 65, No. 97), *Quality Criteria for Water* (EPA 440/5-86-001, 1986 and subsequent amendments "Gold Book"), applicable Federal Regulations (40 CFR Parts 122 and 131), National Toxics Rule (57 FR 60848, 22 December 1992; 40 CFR Part 131.36(b), "NTR"), National Toxics Rule Amendment (Federal Register Vol. 60, No. 86, 4 May 1995 pg. 22229-22237), and best professional judgment as defined in the Basin Plan. Where numeric effluent limitations have not been established in the Basin Plan, 40CFR122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

28. Bases for Effluent Limits

- a) *Federal Pollution Control Act.* Effluent limitations and toxic effluent standards are established pursuant to section 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.
- b) *Applicable Water Quality Objectives.* The Basin Plan numeric water quality objectives (WQOs) as well as a narrative objective for toxicity in order to protect beneficial uses: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms". The Basin Plan also directs that ambient conditions shall be maintained until site-specific objectives are developed. Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

The CTR promulgates numeric aquatic life criteria for 23 toxic pollutants, numeric human health criteria for 57 toxic pollutants and a compliance schedule which authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

- c) *Receiving Water Salinity.* The receiving waters for the subject discharges are non-tidally influenced fresh waters. The CTR states that the salinity characteristics (i.e., fresh water vs. marine water) of the receiving water shall be considered in establishing water quality objectives. Freshwater effluent limitations shall apply to discharges to waters with salinities lower than 1 part per thousand (ppt) at least 95 percent of the time. Marine (saltwater) effluent limitations shall apply to discharges to waters with salinities greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or to tidally-influenced fresh waters that support estuarine beneficial uses, effluent limitations shall be the lower of the marine or freshwater effluent limitation, based on ambient hardness, for each substance. Salinity data indicate that the receiving waters of subject discharge are fresh by the CTR's definition. June 1999 data from nearby Kimball Reservoir, in the headwaters of the Napa River upstream from the plant, showed a salinity value of 0.12 ppt. Secondly, water samples collected at the river both at the E-1 outfall, and 100 feet upstream of the outfall from 1995 through 2000, have average salinity values of 0.12 and 0.09 ppt. The data collected at the E-1 outfall ranged from 0.05 to 0.29 ppt salinity, and the data collected 100 feet upstream of E-1 ranged from 0.04 to 0.23 ppt salinity. Finally, previous permit limits were based on fresh standards. Therefore, this Order's effluent limits are based on fresh water quality objectives (WQOs) based on the receiving water (Napa River upstream from Calistoga) having salinity less than 1 ppt 95 % of the time.
- d) *Technology Based Limits.* Effluent limits for conventional pollutants are technology based. These constituents include: Biochemical Oxygen Demand (BOD), total suspended solids (TSS), settleable

matter, oil and grease, chlorine residual, pH, and coliforms. Technology-based effluent limitations are based on the federal secondary treatment definition.

- e) *Deep Water Discharge.* The discharge to the Napa River is through a three-prong diffuser at outfall E-1. The discharger sends the majority of its effluent through this outfall in the wintertime. The initial dilution received by the discharge in the Napa River has been modeled by the USEPA. Dilution studies illustrate that the effluent through E-1 receives at least 40 times dilution in Napa River. Therefore, during the wet season period (from October 1 through May 15), the discharge is a deep water discharge, and consequently effluent limitations will be calculated assuming dilution (dilution ratio is 10:1).
- f) *Water Quality Based Effluent Limitations.* Toxic substances are regulated in this permit by water quality based effluent limitations derived from USEPA national water quality criteria listed in the Basin Plan Table 3-4, the CTR, the NTR, or USEPA Gold Book, and/or best professional judgment. Because background data are not available, final limits cannot be determined at this time. The discharger is required to gather the appropriate data and the Board shall determine if final effluent limits are needed. If final limits are needed, the permit will be reopened to include final effluent limits in the permit. If a discharge causes, has a reasonable potential to cause, or contributes to a receiving water excursion above a narrative or numeric criteria within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44 (d) (1) (i), requires the establishment of water quality based effluent limits (WQBELs) that will protect water quality. Pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section.
- g) *Basis for Effluent Limits for 303(d) Listed Pollutants* For 303(d) listed pollutants, the Board plans to adopt total maximum daily loads (TMDLs) by 2010 that will include waste load allocations (WLAs), except dioxin has a TMDL adoption date of 2012. The Board defers development of the TMDL for dioxins and furans to the US EPA. The Regional Administrator indicated a timeframe up to 13 years in the May 1999 letter approving the 303(d) list. Due to the compliance schedules for these pollutants exceeding the life of the permit, final WQBELs are discussed below in Finding 28(i). When each TMDL is complete, the Board will adopt a WQBEL consistent with the corresponding WLA. If authorized, a time schedule may be included in the revised permit to require compliance with the final WQBELs.
- h) *Interim Limits for 303(d) Listed Pollutants* In the interim, until either final WQBELs or WLAs are adopted for 303(d)-listed constituents, or a listed constituent that is delisted, state and federal antibacksliding and antidegradation policies and the 2000 SIP require that the Board include interim effluent concentration limits that are either based on current performance or from the previous Order's concentration limit - whichever is lower - to ensure that the waterbody will not be further degraded. In addition to interim concentration limits, interim performance-based mass limits are established to limit the discharge of 303(d)-listed pollutants' mass loads to their current levels. These interim mass limits are based on recent discharge data and are determined for constituents that have a RP and are bioaccumulative.
- i) *Final Limits for 303(d) Listed Pollutants* In the event that a TMDL is not adopted by the Board by 2010 or a TMDL is not established by the US EPA for dioxins and furans by 2012, and an extension of the schedule has not been granted by the USEPA, the Board will impose one of the following alternative final limits:
- i. For a 303(d)-listed bioaccumulative pollutant, the final alternative limit will be no net loading (no net loading means that the actual loading from the discharge must be offset by at least equivalent loading of the same pollutant achieved through mass offset). For dioxins and furans, this no net loading will apply to all 17 congeners using the latest Toxicity Equivalents approach

that is approved by the US EPA at that time. In the absence of a TMDL, any loading to the impaired waterbody has the reasonable potential to cause or contribute to an excursion of the narrative toxicity criterion. Additionally, the existing numeric objective may not be adequate to ensure safe levels of the pollutant in sediment and/or fish. This is because in the case of fish tissue, the bioconcentration factor (BCF), on which the criterion was based, was measured in the laboratory and, therefore, reflects uptake from the water only. Bioaccumulative factors (BAFs) on the other hand, are measured in the field where the uptake in fish is through both food and water. Thus, the bioaccumulation rate in the system may be greater than the bioconcentration rate used to calculate the national water quality objective, which is based on a laboratory-derived BCF. Another reason that the existing water quality objectives may not be adequate is that the criteria they are based on do not always account for routes of exposure, for site-specific circumstances that may render the pollutant more bioavailable, for accumulation in sediment, or for concentrating effects resulting from evaporation.

- ii. For a 303(d)-listed non-bioaccumulative pollutant, the alternative final mass limit will be based on water quality objectives applied at the end of the discharge pipe.

If authorized, a time schedule may be included in the revised permit to require compliance with the final alternative limits.

29. Discharge Prohibition Exception

- a) The Basin Plan prohibits the discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, areas or any immediate tributaries thereof. Discharge of treated wastewater to Napa River which does not receive 10:1 dilution is subject to this prohibition.
- b) The Basin Plan provides that exceptions to the above prohibition will be considered for discharges where: 1) an inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or, 2) the discharge is approved as a part of a reclamation project; or, 3) it can be demonstrated that net environmental benefits will be derived as a result of the discharge.
- c) In addition to the criteria stated above for exceptions, the Basin Plan requires that the Board consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water, and the environmental consequences of such discharges.
- d) The dry season, Napa River discharge prohibition period, is typically from May 1 through September 30 of each year. During this period, the discharger currently reclaims treated wastewater for irrigation of ballparks, building grounds, landscape irrigation, and City owned irrigation fields. From 1989 through 1999, the discharger reclaimed all of the treated wastewater flow during the dry season.
- e) The discharger's pond system, utilized for both treatment and storage of wastewater, affords the discharger a significant volume of storage capacity that can be used for containment of peak wet season flows, or for emergency storage in the event of facility upset. The existence and use of these ponds minimizes the possibility of discharge of untreated or partially treated wastewater to the Napa River.
- f) The Board finds that the water reuse program implemented by the discharger complies with the exception provision of the Basin Plan. The Board hereby grants an exception to the discharge

prohibition for wet season discharges to the Napa River (October 1 through May 15). This exception is subject to the following conditions. The discharger shall:

- i. Continue to operate all treatment facilities to assure high reliability and redundancy;
- ii. Implement a source control program as required by the permit;
- iii. Continue to implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements;
- iv. Continue progress towards construction of new or upgraded treatment facilities. These facilities are to be designed to ensure adequate capacity for community wastewater needs, and an adequate and reliable treatment process developed with sufficient flexibility and redundancy to provide for compliance with permit requirements as necessary to protect beneficial uses of the Napa River.
- v. Continue to promote and encourage beneficial reuse of treated wastewater.
- vi. Demonstrate that the effluent receives a 10:1 dilution ration according to either field measurements, or the U.S. EPA's Visual Plumes model.

30. Reasonable Potential Analysis.

As specified in 40 CFR 122.44(d) (1) (i), permits are required to include limits for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method described in the SIP, Regional Board staff and the discharger have analyzed the effluent data to determine if the discharges had reasonable potential to cause or contribute to an exceedance of a State water quality standard ("RP Analysis"). The RP analysis compares the effluent data with the Basin Plan, CTR, USEPA's NTR, 1998, and USEPA's Quality Criteria for Water, 1986 (Gold Book).

A complete RP analysis cannot be performed on the discharger's effluent because there is insufficient ambient, background data upstream from the facility to determine if an effluent limitation is needed or to calculate a final effluent limitation. In accordance with the SIP, the discharger shall obtain ambient, background water samples for metals and organic priority pollutants upstream from the facility. The discharger may choose to coordinate sampling activities with other POTWs (towns of Yountville, St. Helena, Napa, and American Canyon) discharging into Napa River. After the background information is gathered, the RPA will be performed and the permit reopened to include additional effluent limits if necessary.

- a) *Reasonable Potential Determination* The RP analysis involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on the effluent concentration data for the past three years. In accordance with the SIP, section 1.3, the RP analysis for all constituent is based on zero dilution. The lowest WQO is adjusted for pH, hardness and translator data and the MEC and adjusted WQO are compared to each other. If the MEC is greater than the adjusted WQO, then there is reasonable potential for the constituent to have an excursion above the adjusted WQO then an effluent limit is required.

If the MEC is less than the adjusted WQO, then the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If the background concentration is greater than the adjusted WQO, then an effluent limit is required.

If the constituent was not detected in any of the effluent samples and all of the detection limits are greater than or equal to the adjusted lowest, applicable WQO, then the background is used to compare with the WQO. If the background concentration is greater than the adjusted WQO, an effluent limit is required.

If the constituent was not detected in any of the effluent samples and if any of the detection limits are below the adjusted WQO, the lowest detection limit is used as the MEC and compared with the adjusted WQO. Background concentration is also compared with the adjusted WQO. If the background concentration is greater than the adjusted WQO, an effluent limit is required.

For all constituents that have a RP to cause or contribute to an exceedance of an adjusted WQO, numeric water quality-based effluent limitations (WQBELs or effluent limits) are required.

If data are unavailable or insufficient to conduct the RP analysis for the constituent, or if all the detection limits of the constituent are greater than or equal to the adjusted WQO, the Board shall establish interim requirements, in accordance with Section 2.2.2 of the SIP, that require additional monitoring for the constituent in place of a WQBEL. Upon completion of the required monitoring, the Board shall use the gathered data to conduct the RP analysis and determine if an effluent limit is required.

If there is insufficient data to determine if an effluent limitation for a criterion is needed or to complete the RP, the Board shall not establish in the NPDES permit numeric interim limitations. There are several constituents that do not have sufficient data to determine if an effluent limit is required – these constituents are listed in Tables 1 and 2 (Reasonable Potential Analysis Summary for the Wet and Dry Seasons, respectively) with an “I”, for incomplete analysis, in the reasonable potential column. The constituents with an “I” either have a MEC that is lower than the WQO, or no MEC and background data. Because no background data are available for the constituents, the RP analysis cannot be completed and the background data is required. Some constituents are assigned an “I(B)” in the RP column because these constituents have an MEC lower than the lowest WQO, however, the range of the detection limits may be greater than or close to the lowest WQO value. The RP analysis on constituents with an I(B) is incomplete and background data is required to complete the RP analysis.

If there is a “Y” in the RP column, the MEC is greater than the WQO and an interim effluent limit is required. However, there is insufficient data available – there is no background data – and final limits cannot be determined. Therefore interim, numeric limits are required in the meantime.

If there is insufficient data to calculate a final limitation, an interim numeric limitation is established. For constituents where the MEC is greater than the WQO, an interim numeric limit is established. The final limit cannot be determined because the background information is not available.

The Board shall require periodic monitoring (at least once prior to the issuance and reissuance of a permit) for constituents for which criteria or objectives apply and for which no effluent limitations have been established, however, the Board may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement.

- b) *Interim Limits.* For constituents where the MEC is greater than the adjusted WQO, interim numeric limits are established and when the background data is available, final limits shall be established. In accordance with the SIP, numeric, interim limitations for these constituents are based on current treatment plant performance or existing permit limitations, whichever is more stringent. These interim limits will be superseded upon completion of TMDL and WLA, if applicable. According to the antibacksliding rule of the Clean Water Act, Section 402(o), the permit may be modified to

include a less stringent requirement following completion of a TMDL and WLA, or if one of the other bases for an exception to the rule is met.

Constituents that have background levels higher than their respective WQOs, require a WQBEL, according to RP analysis methodology set out in the SIP (Section 1.3). However, for certain constituents for which there is insufficient data, interim requirements are established to provide data to determine (1) whether effluent limitations are needed, and (2) what the effluent limitations should be. These interim requirements include: continued monitoring and participation in studies to improve sampling and analytical techniques which would result in lower detection limits.

- c) *RPA Data.* The RP analysis for organics was based on the effluent monitoring data from March 1988 through March 2000. The RP analysis for metals was based on effluent monitoring data from 1997 through 2000. A limited data set was used for the metals analysis, as much of the historical data set was derived using higher than acceptable detection limits. More information must be gathered on the upstream, ambient receiving waters in order to complete a RP analysis. Table 1 lists the constituents, and where available, the lowest WQO, the MEC, the RP result, the limits from the previous permit, the range of the constituent concentrations detected in the effluent, and the interim limits.

Historical effluent limitations were lower than current analytical techniques can measure and the discharger should work with the laboratory to lower limits to meet applicable and reliable detection limits. During the term of the permit, if and when the monitoring with improved detection limits shows any of the above constituents at levels exceeding the applicable WQOs, the discharger will be required to initiate source identification and control for the particular constituent. Attachment F lists the goal for the method detection limit for each constituent.

Polynuclear Aromatic Hydrocarbons (PAHs) The RPA was conducted on individual PAHs not total PAHs, as required by the SIP and CTR. Based on the RPA, certain individual PAH constituents have a reasonable potential to cause or contribute to an exceedance of a WQO and a numeric WQBEL is required. Based on BPJ, an interim performance based limit equal to the average plus three times the standard deviation of the 1992-2000 data set is applied. Provision 10 requires the discharger to characterize the effluent for individual PAH constituents listed in Table 2 of the SMP. The discharger will monitor for PAH constituents using commercially available analytical techniques employing the lowest detection limits feasible. Upon completion of the required effluent monitoring, the Board shall use the gathered data to complete the RPA for all individual PAH constituents (as listed in the CTR) and determine if a water-quality based effluent limitation is required.

Organic Constituents. Reasonable Potential cannot be determined for various organic constituents (e.g., PCBs, semi-volatile organic compounds) because the Discharger has not been required to sample organic constituents by the previous permits. In the absence of any data for these compounds, the Discharger will monitor PCBs, volatile and semi-volatile organic constituents annually using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve to the point where it is feasible to evaluate compliance with applicable water quality criteria, a new RPA will be conducted to determine there is a need to add numeric effluent limits to the permit or to continue monitoring.

Permit Reopener. A reopener provision is included in this Order that allows numeric limits after the background information is gathered and the RP analysis is completed. In addition, the permit will be reopened to allow new numeric limitations to be added to the permit for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives. This determination, based on monitoring results, will be made by the Board.

Table 1 – Reasonable Potential Analysis Summary

CTR #	Constituent	Lowest WQO (µg/L) (all freshwater) (a)	MEC, µg/L	Reasonable Potential	Monthly Avg. / Daily Avg. (from previous permit)	Range, µg/L (b) (1997-2000 data)	Interim Limits, µg/L (Monthly Avg./Daily Avg.)
2.	Arsenic	50	18	Incomplete	-- / 20	<4 – 18	
4.	Cadmium	0.48 (a)	0.2	Incomplete	-- / 10.7	<0.2 – <1	
5	Chromium	11	2	Incomplete	-- / 10	<2 – <5	
6.	Copper	4.59 (a)	15	Yes	-- / 78	<2 – 15	-- / 18.3
7.	Lead	.78 (a)	2	Yes	-- / 23	<2 – <3	-- / 4.2
8.	Mercury	0.012	0.0034	Incomplete	0.08 / 2	0.0034 – <0.2	
9.	Nickel	56 (a)	9	Incomplete	-- / 200	3 – 9	
10.	Selenium	50	1	Incomplete	-- / 50	<1 – <10	
11.	Silver	0.6 (a)	1	Yes	-- / 40	<1 – <3	-- / 5.3
13.	Zinc	41.4 (a)	50	Yes	-- / 500	<20 – <504 – 92	-- / 60/5
14.	Cyanide	5.2	6	Yes	-- / 52	2 – 20 <3 – <6	-- / 8.2
54.	Phenol	4600000	5	Incomplete	-- / 1000	<5	
56	Acenaphtene	1200	0.30	Incomplete	0.03 for the sum of the detected levels of all 16 PAHs	<0.3 – <5	
57	Acenaphthylene	NA	0.3	Incomplete		<0.3 – <10	
58	Anthracene	9600	0.20.1	Incomplete		<0.1 – <5	
60	Benzo(a)anthracene	0.0044	3.8	Yes		3.6 – 3.8	-- / 6.5
61	Benzo(a)pyrene	0.0044	NA	Incomplete		<0.25 – <5	
62	Benzo(b)flouranthrene	.0044	NA	Incomplete		<0.25 – <5	
63	Benzo(g,h,l)perylene	NA	NA	Incomplete		<0.3 – <5	
64	Benzo(k)flouranthrene	0.0044	NA	Incomplete		<0.25 – <5	
73	Chrysene	0.0044	NA	Incomplete		<0.25 – <5	
74	Dibenzo(a,h)anthracene	0.0044	NA	Incomplete		<0.3 – <5	
87	Flourene	1300	0.3	Incomplete		<0.3 – <5	
86	Flouranthene	300	2.8	Incomplete		<0.3 – 2.8	
92	Ideno(1,2,3-cd)pyrene	0.0044	NA	Incomplete		<0.25 – <5	
94	Napthalene	NA	NA	Incomplete		<0.3 – <5	
99	Phenanthrene	NA	4.3	Incomplete		<0.3 – 4.3	
100	Pyrene	960	10.9	Incomplete		<0.3 – 10.9	

a.) The freshwater quality criteria from the 1995 Basin Plan, Table 3-4, are adjusted for a site-specific minimum hardness of the Napa River receiving water environment of 33 mg/l as CaCO₃)

Total Maximum Daily Loads and Waste Load Allocations

TMDLs will establish waste load allocations (WLAs) and load allocations for point sources and non-point sources, respectively, that will result in achieving water quality standards for 303(d)-listed pollutants. Data collected to develop these TMDLs could result in changes to the 303(d) list or changes to the water-quality objectives for San Pablo Bay. The final effluent limitations for these pollutants for this discharge will be based on WLAs contained in the TMDLs. The following summarizes the Board's strategy to collect water quality data and to develop TMDLs:

- a) Data collection - The Regional Board will request dischargers to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives. The Regional Board will require dischargers to characterize loadings from their facilities into the water quality-limited waterbodies. The results will be used in the development of TMDLs, but may also be used to update and revise the 303(d) list.

- b) **Funding mechanism** - The Board has received and anticipates a continuation of resources from federal and state agencies for development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources with development costs allocated among dischargers who discharge 303(d)-listed pollutants, through the Regional Monitoring Program (RMP) or other appropriate funding mechanisms.

Copper

- a. **EPA Guidance.** On October 1, 1993, in recognition that the dissolved fraction is a better representation of the biologically active portion of the metal than the total or total recoverable fraction, USEPA's Office of Water issued guidance stating that dissolved metal concentrations should be used for the application of metals aquatic life criteria and that state water quality standards for the protection of aquatic life (with the exception of chronic mercury criterion) be based on dissolved metals. USEPA amended the NTR in 1995 to include factors to convert total metals to dissolved metals for both fresh and salt water objectives. On May 18, 2000, USEPA adopted the California Toxics Rule (CTR), where water quality criteria for metals are expressed as dissolved. Since effluent limits must be expressed as total recoverable metals, use of the NTR/CTR objectives would require translation from dissolved to total recoverable metals.
- b. **Water Effects Ratios.** In order to assure that the metals criteria are appropriate for the chemical conditions under which they are applied, USEPA promulgated the 1992 NTR criteria in terms of total recoverable metal and provided for adjustment of the criteria through application of the "water-effect ratio" (WER) procedure. A WER is a means to account for a difference between the toxicity of the metal in laboratory dilution water and its toxicity in the water at the site. The NTR was a formal rulemaking process with notice and comment by which EPA pre-authorized the use of a correctly applied water-effect ratio by States subject to the NTR. EPA published *Interim Guidance on Determination and Use of Water Effects Ratios for Metals* on WER February 22, 1994 that superseded all prior guidance. Both total and dissolved criteria can be modified by a site-specific adjustment.
- c. **Translator Study.** State Board published guidance in March 2000 in the SIP on using metal translators, derived from site specific receiving water data, to calculate total recoverable effluent limits from dissolved receiving water criteria. In order for the Board to consider application of the dissolved criterion to the discharge, an appropriate translator based on effluent and receiving water data must be developed.

In order to develop information that may be used to establish a water quality based effluent limit based on dissolved copper criteria, the discharger may choose to implement a work plan individually, or jointly with other dischargers to Napa River, to utilize existing data or collect new data for development of a dissolved to total copper translator. If the discharger chooses to proceed with the optional study, this work shall be performed in accordance with the tasks as specified in Provision F. 3. Optional Copper Translator Study and Schedule. The Board staff will consult California Department of Fish and Game staff in approving translator workplan. If site specific translator data are not generated, the default CTR copper translator of 0.96 will be used to calculate total metals based copper effluent limits.

- d. **Effluent Limits.** As copper has been determined to be an impairing pollutant on the 303(d) list, and since a RPA has determined there is reasonable potential for the discharge to contribute to a water quality exceedance, a WQBEL is required in this permit. The final WQBEL will be consistent with the wasteload allocation derived from a TMDL. In the interim, this order establishes an interim performance-based concentration limit of 18.3 µg/L for discharges to Napa River during the wet

season. In the event that a TMDL is not adopted by 2010, and an extension of the schedule has not been granted by the USEPA, the Board will impose an alternative final limit at end of pipe.

- e. *Special Studies.* If a revised WQBEL for copper is based on the national dissolved criteria, it will be important to also consider protection of beneficial uses that could be impacted by particulate copper. There are uncertainties about the quantities of copper that could be a stress to the ecosystem, particularly in mediums other than the water column (such as sediments, and/or organisms that take up particulate matter). In the future, the discharger may be requested to participate in efforts to reduce effluent copper concentrations

Mercury

- a. *Mercury Water Quality Objectives.* For mercury, the existing Basin Plan objective and the national criterion are based on protection of human health. The objectives are intended to limit the bioaccumulation of methyl-mercury in fish and shellfish to levels which are safe for human consumption. As described in the Gold Book, the fresh water criterion is based on the Final Residual Value of 0.012 µg/L derived from the bioconcentration factor of 81,700 for methyl-mercury with the fathead minnow, which assumes that essentially all discharged mercury is methyl-mercury. These criteria are below levels that have produced acute and chronic toxicity in both fresh and salt water aquatic species.

The Board intends to work toward the derivation of a TMDL that will lead towards overall reduction of mercury mass loadings in the watershed. Based on these studies, the Board may amend this permit to specify a different limit for mercury.

- b. *Mercury as a Persistent Bioaccumulative Pollutant.* Mercury is listed on the 303(d) list for impairing San Pablo Bay due to fish tissue level exceedences. For pollutants that cause impairment due to accumulations in the sediment or food chain, and for which a TMDL has not been adopted by the Board by 2010, the final effluent limitation will be no net loading. This would mean, that if a TMDL is not adopted by the Board by the scheduled date or that date has not been extended, the discharger will propose a mass offset program, that would offset their mercury loads with source reductions which are not already required elsewhere in the watershed.
- c. *Mercury Strategy* Board staff are in the process of developing a plan to address control of mercury levels in San Francisco Bay including development of a TMDL. Presently, for constituents with a RP, the interim limit is based on the lower of the existing limit or their performance based limit. The interim limit may not necessarily provide a 10:1 dilution. When final limits are determined, there is no dilution for mercury since it is a 303(d) listed pollutant.

The discharger is required to maximize control over influent mercury sources, with consideration of relative costs and benefits. The discharger is encouraged to continue working with other municipal dischargers to optimize both source control and pollution prevention efforts and to assess alternatives for reducing mercury loading to, and protecting beneficial uses of, receiving waters.

- d. *Mercury Compliance.* Effluent mercury concentrations measured from March 1988 through March 2000, ranged from 0.034 to <0.2 µg/L. Improved (ultra-clean) sampling and analysis techniques have lowered the detection limit for mercury to below the 0.012 µg/L objective, and the discharger began using these techniques in 2000. The discharger will continue to use ultra-clean sampling and analysis techniques in order to gather more accurate data on concentrations and mass loadings and ascertain the discharger's future ability to comply with future limits.
- e. *Special Studies and Schedules.* Board staff is in the process of developing a TMDL/WLA to address mercury compliance for all point and non-point source dischargers, including the discharger.

Review of recent data indicates that in the absence of dilution credit (as allowed for deep water dischargers) the discharge concentrations for these facilities are all generally higher than the objectives. Although the municipal dischargers are generally not considered to be significant contributors to the bulk mercury loading to the San Francisco Bay, there does remain the possibility of localized impacts related to their discharges. As such, the discharger is required to maximize their control over influent mercury sources, with consideration of relative costs and benefits. The discharger is encouraged to work with other Napa River dischargers to optimize both source control efforts and assessment of alternatives for protecting beneficial uses of receiving waters.

- f. *Source Control.* This Order requires the discharger to develop and implement a more aggressive source control program than has been performed in the past as necessary to comply with, or evaluate their ability to consistently comply with, a 0.012 µg/L limit, and to reduce any significant, controllable sources that may be contributing to mercury accumulation in fish. The Regional Board intends to work toward the derivation of mercury effluent limitations for the North Bay dischargers, that will lead towards overall reduction of mercury mass loadings in the watershed. This permit will be revised after the TMDL and WLA have been completed. This permit contains a time schedule for the mercury source control program. The permit will also be amended if new data collection using ultra-clean sampling and analysis techniques do not indicate a reasonable potential to cause or contribute to violation of the mercury water quality objective of 0.012 µg/L.

31. Dioxins and Furans

- a. *Numerical Water Quality Objective* On May 18, 2000, the U.S. EPA published in the Federal Register the CTR establishing water quality standards for toxic pollutants for California waters (FR 31681). The CTR was effective on the date of publication. The following are pertinent to dioxins and furans:
- i. The CTR establishes a standard for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 0.014 picograms per liter (pg/l) for the protection of human health from consumption of aquatic organisms.
 - ii. Although the CTR establishes a numeric standard for just one of the dioxin-like compounds, the preamble of the CTR states that California should use toxicity equivalents or TEQs in NPDES Permits where there is a reasonable potential for dioxin-like compounds to cause or contribute to a violation of a narrative criterion. The preamble further states U.S. EPA's intent to use the 1998 World Health Organization Toxicity Equivalence Factor¹ scheme in the future and encourages California to use this scheme in State programs. These 1998 WHO TEFs for dioxins and furans compounds are shown in Provision 13 of the Order. Finally, the preamble states U.S. EPA's intent to adopt revised water quality criteria guidance subsequent to their health reassessment for dioxin-like compounds.
- b. *State Implementation Plan* The SIP establishes the implementation policy for all toxic pollutants including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires monitoring once during the wet season and once during the dry season for one year by all minor NPDES dischargers for all seventeen dioxins and furans compounds.

32. Acute Toxicity

- a) The discharger currently conducts monthly acute toxicity tests in accordance with wastewater testing method specified in USEPA/600/4-90/027F, 4th edition and using fathead

¹ The 1998 WHO scheme includes TEFs for dioxin-like PCBs. But since this Order addresses only dioxins and furans, these dioxin-like PCB TEFs are not addressed in this Order.

minnows. In addition, the discharger's lab is certified by the Department of Health Services.

- b) If fathead minnows are used, the certified wastewater testing method requires the use of juveniles. Due to the young age of the fish, this is a relatively sensitive species and is acceptable for use in the acute toxicity tests when the 4th edition of the wastewater testing document is used.

33. Chronic Toxicity

- a) *Program History.* The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." The Board initiated the Effluent Toxicity Characterization Program (ETCP) in 1986 with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams.

Attempts have been made to include numeric chronic toxicity limits in NPDES permits. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits, based on an eleven sample median value of 1 or 10 TUC and 90th percentile value of 2 or 20 TUC, depending on dilution. However, due to the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the SWRCB stated, by letter dated November 8, 1993, that the Regional Board will have to reconsider the Order. This letter also committed to providing the Regional Boards with guidance on issuing permits in the absence of the State Plans (*Guidance for NPDES Permit Issuance*, February 1994).

- b) *SWRCB Toxicity Task Force Recommendations.* The Toxicity Task Force provided several consensus-based recommendations in their October 1995 report to the SWRCB for consideration in redrafting the State Plans. A key recommendation was that permits should include narrative rather than numeric limits. The numeric test values should then be used as toxicity "triggers" to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TREs).
- c) *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the SWRCB, and to update, as appropriate, the Board's Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based on analysis of discharger routine monitoring and ETCP results, and in accordance with current USEPA and SWRCB guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will continue to be made based on best professional judgment as indicated in the Basin Plan.
- d) *Toxicity Reduction Evaluations.* In accordance with USEPA guidance, this Order includes the Basin Plan narrative toxicity objective as a chronic toxicity limit, implemented via monitoring. The discharger may be required to prepare and implement a Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE) as described in the Provision 8. Once a Chronic Toxicity Monitoring Program, acceptable to the Executive Officer, is established, routine chronic toxicity testing will begin.
- e) *Reopener* If significant non-artifactual toxicity is consistently detected and the discharger fails to aggressively implement all reasonable control measures included in the TRE workplan, the Board will consider amending the permit to include numeric toxicity limits.

OPTIONAL MASS OFFSETS

34. This Order contains requirements to prevent potential degradation of 303(d)-listed waterbodies. Such requirements include the adoption of mass limits that are based on the treatment facility performance, provisions for aggressive source control and waste minimization, feasibility studies for wastewater reclamation, and treatment facility optimization. After implementing these efforts, the discharger may find that further net reductions of the total mass loadings of the 303(d) listed pollutants to the receiving water can be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

BASIN PLAN DISCHARGE PROHIBITION

35. Discharge to the Napa River either prior to October 1 or later than May 15 may be authorized by the Executive Officer, for a specified period not to exceed one month, based on written request from the discharger documenting that adequate dilution is available at the discharge point and/or normally planned disposal to land is not feasible due to wet season conditions. In these cases, the discharge shall comply with the effluent limitations prescribed in Provision B of this Order. In the event of an unforeseen emergency discharge, the discharger shall initiate a phone call, fax or email to provide immediate notification of action.

STORM WATER

36. The storm water flows from the wastewater treatment facility process areas are directed to the headworks and treated along with wastewater discharged to the facility.

SPECIAL STUDY – BACKGROUND DATA OF RECEIVING WATERS

37. Ambient, background data, upstream from the facility, is required, according to the SIP in order to complete the RP analysis and the to determine final effluent limits, where applicable. The Discharger is required to investigate alternative analytical procedures that result in lower detection limits. This may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers.

SPECIAL STUDY – DIOXIN STUDY OF THE EFFLUENT

38. In accordance with the SIP, the minor dischargers shall conduct effluent monitoring for the seventeen 2,3,7,8-TCDD congeners. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.

POLLUTANT MINIMIZATION PROGRAM (PMP)

39. In general, some constituents listed in Table 2 of the Self Monitoring Plan, have never been monitored or have not been detected at levels greater than analytical detection limits used. However, these detection limits are numerically greater than applicable WQOs. As a result, the RPA cannot be determined. The discharger should work with its laboratory to lower limits to meet applicable reasonable detection limits. If the discharger using the new or improved methods finds pollutants present at levels above the new detection limits but below the former analytical quantification limit established, and it is determined the pollutant has reasonable potential to cause or contribute to exceedance of State water quality standards; then in the absence of effluent limits, the Discharger shall implement a pollutant minimization plan to achieve the water quality standards. This Order contains Provision 11 which requires the Discharger to submit and implement a pollution minimization plan for these pollutants, if appropriate.

SPECIAL STUDY – EFFLUENT CHARACTERIZATION

40. The discharger shall continue to monitor and evaluate effluent discharged to the Napa River for the constituents listed in Table 2 of the Self-Monitoring Report (Attachment E). However, the discharger is required to investigate alternative analytical procedures that result in lower detection limits. This may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers. The purpose of this special study is to ensure sufficient data is available to perform the RPA for the next permit reissuance and to determine compliance with limits specified in this Order.
41. **Operation and Maintenance Manual.** An Operation and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.
42. **Treatment Plant Industrial Storm Water Discharges**
 - a. **Regulations.** Federal regulations for storm water discharge were published by the United States Environmental Protection Agency (USEPA) on November 16, 1990. The regulations require specific categories of industrial activity to obtain NPDES Permit coverage for all discharges of storm water associated with industrial activities (industrial storm water), either directly or indirectly through a conveyance system, to surface waters. Dischargers are required to control pollutants in stormwater discharges through implementation of Best Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT).[40 CFR Parts 122, 123 and 124].
 - b. **Industrial Storm Water Discharges regulated by this Permit:**

Storm water flows at the discharger's treatment plant for process areas where storm water may be exposed to pollutants associated with the treatment plant activities are captured and directed back into the plant's wastewater treatment process. These stormwater flows constitute all industrial storm water at this facility and therefore this Permit and Order regulates all industrial storm water discharges associated with the discharger's wastewater treatment facility.

SPECIAL STUDY – APPROVAL OF THE NEW TREATMENT PLANT

43. The permitted average dry weather flow capacity of the treatment plant identified in Prohibition A.2 of this Order may be increased to 0.84 mgd by written approval from the Executive Officer, if the Discharger documents facility capacity and reliability as described in the proposed improvements in Findings 19, 20, and 21.
44. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (Section 21100 et. seq.) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.
45. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity for a public hearing and to submit their written views and recommendations.
46. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the **City of Calistoga (Discharger)** shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant is prohibited, except as provided for bypasses under the conditions stated in 40 CFR 122.41 (m) (4) and (n).
2. Average dry weather flow to the treatment plant greater than 0.70 million gallons per day is prohibited. This average dry weather flow limit shall be increased to 0.84 mgd, upon completion of the planned new treatment plant facilities and completion of the tasks identified in Provision F. 6 of this Order, the average dry weather flow to the new treatment plant greater than 0.84 mgd is prohibited. Average dry weather flow shall be determined over a period of three consecutive dry weather months each year.
3. Discharge of wastewater to receiving water at any point where it does not receive a minimum initial dilution of 10 to 1 (10:1), river to wastewater flow, is prohibited. This minimum dilution ratio of 10:1 must be verified by either field measurements at the facility, or by the U.S. EPA Visual Plumes Model.
4. Discharge to the Napa River is prohibited during the period from May 16 through September 30 of each year. Discharge to the Napa River prior to September 30 or later than May 15 may be authorized by the Executive Officer, based on written, email or facsimile request from the discharger documenting that normally planned disposal to land is not feasible due to wet season conditions. In these cases, the discharge shall comply with the effluent limitations prescribed in Section B.1. of this Order. In the event of an emergency discharge, the discharger shall initiate a phone call, fax or email to provide immediate notification of the action. The Executive Officer will authorize a specific time frame for the discharge.
5. Wastewater with an elevated temperature discharged into a receiving water that supports cold fresh water habitat is prohibited, unless it can be demonstrated to the satisfaction of the Regional Board that such an alteration of temperature does not adversely affect the beneficial uses of the receiving water.

B. EFFLUENT LIMITATIONS

The term 'effluent' in the following limitations means the fully treated wastewater effluent from the Discharger's wastewater treatment facility, as discharged to the Napa River.

1. For a river to wastewater dilution of at least 10:1 but less than 50:1, effluent E-1 shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Instantaneous Maximum</u>
a. Biochemical Oxygen Demand (BOD ₅ , 20°C)	mg/L	20	10	--
b. Total Suspended Solids	mg/L	30	15	--
c. Oil and Grease	mg/L	10	5	--
d. Settleable Matter	ml/L-hr	0.2	0.1	--
e. Turbidity	NTU	10	--	--
f. Total Chlorine Residual (1)	mg/L	--	--	0.0

- (1) This effluent limit is defined as below the limit of detection in standard test methods defined in the 20th edition of the *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chloring residual exceedances are false positives. If convincing evidence is provided, Board

staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

2. For a river to wastewater dilution of at least 50:1, the effluent E-2 shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Instantaneous Maximum</u>
a. BOD ₅ , 20°C	mg/L	60	30	--
b. Total Suspended Solids	mg/L	60	30	--
c. Oil and Grease	mg/L	20	10	--
d. Settleable Matter	ml/L-hr	0.2	0.1	--
e. Total Chlorine Residual (1)	mg/L	--	--	0.0

- (1) This effluent limit is defined as below the limit of detection in standard test methods defined in the 18th edition of the *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chloring residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

The following limitations, 3 through 8, shall apply at all times.

3. **85 Percent Removal, BOD & TSS (monthly average minimum):** The arithmetic mean of the biochemical oxygen demand (five-day, 20° C) and total suspended solids values, by weight for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected during the same period.
4. **pH:** The pH of the effluent shall not be less than 6.5 nor greater than 8.5 ⁽¹⁾.
- (1) Pursuant to 40 CFR 401.17, pH effluent limitations under continuous monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied: (i) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) No individual excursion from the range of pH values shall exceed 60 minutes.
5. **Total Coliform Bacteria:** The treated wastewater, at some point in the treatment process after disinfection and prior to discharge, shall meet the following limits of bacteriological quality:
- The 5-day moving median value for the Most Probable Number (MPN) of total coliform bacteria shall not exceed 23 MPN/100 mL; and
 - Any single sample shall not exceed 240 MPN/100 mL.
- The discharger may use alternate fecal coliform limits of bacteriological instead of meeting 5.a. and 5.b. above (total coliform limits) provided that it can be conclusively demonstrated through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.
6. **Acute Toxicity:** Representative samples of the effluent shall meet the following limits for acute toxicity: (see Provision 7 of this Order for more information)
- The survival of organisms in the undiluted effluent shall be at least 70 percent in each bioassay.

b. The survival of the 3-sample moving median value shall be at least 90 percent.

7. **Chronic Toxicity:** Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria in Provision 8:

- a. routine monitoring;
- b. accelerate monitoring after exceeding a three sample median value of 10 TUC⁽¹⁾ or a single sample maximum of 20 TUC;
- c. return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "b";
- d. initiate approved TRE workplan and continue accelerated monitoring if monitoring confirms consistent toxicity above either "trigger" in "b";
- e. return to routine monitoring after appropriate elements of TRE workplan are implemented and toxicity drops below "trigger" levels in "b", or as directed by the Executive Officer.

⁽¹⁾ A TUC equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in Attachment F of this Order. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

8. **Interim Effluent Limitations:** Table 4 shows the interim limits for deep water discharges from October 1 through May 15, and shall apply.

Table 4 - Interim Limits for Wet Season Discharge (October 1 through May 15) (a, c)

Constituent / CTR #	Daily Maximum, µg/L (c)
Copper (# 6)	18.3
Lead (# 7)	4.2
Silver (# 11)	5.3
Zinc (#13)	60.5
Cyanide (#14) (b)	8.2
Benzo(a)anthracene (#60)	6.5

Notes:

- a) These limits are based on fresh water quality objectives, and are intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
- b) The discharger may demonstrate compliance with this limitation by measurement of weak dissociable cyanide.
- c) All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series). Metal limits are expressed as total recoverable metals.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;

- b. Bottom deposits or aquatic growths;
 - c. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity related to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.
 - d. Alteration of apparent color beyond present natural background levels;
 - e. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - f. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:
- a. Dissolved Oxygen: 5.0 mg/l, minimum.
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide: 0.1 mg/l, maximum.
 - c. pH: Variation from normal ambient pH by more than 0.5 pH units.
 - d. Un-ionized Ammonia: 0.025 mg/l as N, annual median;
and: 0.16 mg/l as N, maximum.
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. Temperature:
- a. Interim Limit: The discharge shall not cause the receiving water temperature to increase by more than 5°F or by 2.78°C for more than one hour. (The interim limit may become final if the Discharger demonstrates to the satisfaction of the Regional Board that such an alteration in temperature does not adversely affect the beneficial uses of the receiving water.
 - b. Final Limit: If adverse impacts cannot be adequately addressed, a more stringent temperature requirement, or a discharge prohibition, may be imposed by the Regional Board.
4. The discharge shall not cause a violation of any applicable water quality objective or standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. POND LIMITATIONS

1. Wastewater within one foot of the surface of all wastewater ponds shall meet the following limits, in any grab sample:
 - a. Dissolved Oxygen: 2.0 mg/L, minimum;
 - b. Dissolved Sulfide: 0.1 mg/L, maximum

2. a. A minimum freeboard of at least one (1) foot shall be maintained in existing treatment plant Pond 1.
- b. A minimum freeboard of at least two (2) feet shall be maintained in existing treatment plant Pond 2.
3. All ponds shall be protected against erosion, flooding and washout from floods having a predicted frequency of once in 100 years.
4. The waste shall not cause a significant degradation of any ground water so as to impair beneficial uses.

E. SLUDGE MANAGEMENT REQUIREMENTS

- a) All sludge generated by the discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to the USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the discharger. The RWQCB should be copied on relevant correspondence and reports forwarded to the EPA regarding sludge management practices.
- b) Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- c) Due to mitigate: The discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.
- d) The discharge of sewage sludge shall not cause waste material to be in a position where it is, or can be carried from the sludge treatment and storage site and deposited in the waters of the State.
- e) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.
- f) For sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator as defined in 40 CFR 503, the discharger shall submit an annual report to the USEPA and the Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.
- g) Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual self-monitoring report, the discharger shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.
- h) Permanent on-site sludge storage or disposal activities are not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the discharger.
- i) Sludge Monitoring and Reporting Provisions of this Board's "Standard Provisions and Reporting Requirements", dated August 1993, apply to sludge handling, disposal and reporting practices.
- j) The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

F. PROVISIONS

1. **Rescission of old Order.** Requirements prescribed by this Order supercede the requirements prescribed by Order No. 92-062. Order No. 92-062 is hereby rescinded.
2. **Compliance.** The Discharger shall comply with all sections of this Order immediately upon adoption.
3. **Self-Monitoring Program.** The Discharger shall comply with the Self-Monitoring Program for this Order, as adopted by the Board and as may be amended by the Executive Officer.
4. **Standard Provisions and Reporting Requirements.** The Discharger shall comply with all applicable items of the attached "*Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*", August 1993, or any amendments or revisions made by the Board. Where provisions or reporting requirements specified in this Order are different from related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.
5. **New Water Quality Objectives.** As new or revised water quality objectives come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this permit will be modified as necessary to reflect updated water quality objectives. Adoption of effluent limitations contained in this permit is not intended to restrict in any way future modifications based on legally adopted water quality objectives.
6. **Permitted Treatment Plant Flows:**

The permitted average dry weather flow capacity of the treatment plant identified in Prohibition A.2 of this Order may be increased to 0.84 mgd by written approval from the Executive Officer, in accordance with the following conditions:

 - a. Completion of the proposed improvements to the wastewater treatment facility.,
 - b. Facility capacity and reliability: Documentation of adequate reliability, capability and performance of the wastewater facilities in order to maintain compliance with waste discharge requirements. Hydraulic and organic loading capacities of the treatment facilities shall be evaluated by appropriate combinations of desk-top analyses and treatment process stress testing to simulate design peak loading conditions. Evaluation shall include treatment process operations under both dry weather and wet weather design flow conditions, and effluent disposal capacity including storage and discharge to land through reclamation.
 - c. Compliance with all applicable provisions of the California Environmental Quality Act (California Public Resources Code Division 13, Chapter 3, Section 21100 et seq.).
 - d. Adequate financial provisions to ensure adequate operation and maintenance of the wastewater facilities.
 - e. Documentation of completion or implementation of the above measures, to the Executive Officer's satisfaction.
7. **Acute Toxicity Monitoring (Whole Effluent Bioassays):**
 - a. Compliance with Effluent Limitation B.6. of this Order shall be evaluated by measuring survival of test fishes exposed to undiluted effluent for 96 hours in static renewal bioassays, using 24-hour composite samples representative of the discharged effluent. Each fish specie tested represents a single bioassay.

- b. Two fish species shall be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of the following three species: three-spine stickleback, rainbow trout and fathead minnow.
- c. Compliance monitoring with only one fish specie (the most sensitive, if known) may be allowed by the Board's Executive Officer, if the both of the following conditions are met:
 - i) The Discharger can document that the acute toxicity limit specified in this Order has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of the two fish species; and
 - ii) A single screening using all three fish species confirms the documented pattern.
All tests must be completed within ten days of initiating the first test.
- d. All bioassays shall be performed according to protocols approved by the U.S. EPA or State Board, or published by the American Society for Testing and Materials (ASTM) or American Public Health Association.

8. Compliance with Chronic Toxicity

The discharger shall monitor and evaluate effluent discharged to the Napa River for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following:

- a. The discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.
- c. Chronic toxicity evaluation parameters:
 - (1) a three sample median value of 10 TU_c ; and
 - (2) a single sample maximum value of 20 TU_c .
 - (3) These parameters are defined as follows:
 - (a) Three-sample median: A test sample showing chronic toxicity greater than 10 TU_c represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TU_c .
 - (b) TU_c (chronic toxicity unit): A TU_c equals $100/NOEL$ (e.g., If $NOEL = 100$, then toxicity = 1 TU_c). $NOEL$ is the no observed effect level determined from IC, EC, or $NOEC$ values.
 - (c) The terms IC, EC, $NOEL$ and $NOEC$ and their use are defined in Attachment F of this Order.
- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the discharger shall initiate a chronic toxicity reduction evaluation (TRE).

9. Toxicity Reduction Evaluation (TRE) for Chronic Toxicity

If there is a consistent exceedance of either of the chronic toxicity monitoring triggers in the screening and variability phases, the discharger shall implement a TRE in accordance with a TRE work plan acceptable to the Executive Officer. The TRE shall be conducted in accordance with the following:

- a) The discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 60 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.
- b) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
- c) The TRE shall be conducted in accordance with an approved work plan.
- d) The TRE needs to be specific to the discharge and discharger facility, and be in accordance with current technical guidance and reference materials including US EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:
 - a. Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - b. Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
 - c. Tier 3 consists of a toxicity identification evaluation (TIE).
 - d. Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - e. Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
 - f. Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- e) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
- f) The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.
- g) As toxic substances are identified or characterized, the discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
- h) Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
- i) The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment F of this Order. The discharger shall comply with these requirements as applicable to the discharge.

10. Special Study - Effluent Characterization for Selected Constituents

The discharger shall monitor and evaluate effluent discharged to the Napa River for the constituents listed in Table 2 of the SMP of this Order (SMP Table 2 Constituents). Compliance with this requirement shall be achieved in accordance with the following:

- a. This effluent monitoring shall include a minimum of three effluent sampling and analysis events.
- b. This report shall include analytical procedures used and achieved for each constituent, including the method detection limit (MDL) and minimum level (ML). For each constituent, the applicable analytical measurement levels shall be adequate to evaluate observed effluent concentrations with respect to the water quality objective given in SMP Table 2, where technically and reasonably feasible. The discharger shall participate in a regional study or a joint study with other dischargers to determine if alternative analytical methods with lower detection levels for organic compounds are currently available through commercial laboratories.

- c. This report shall include an evaluation of observed effluent concentrations with respect to the water quality objectives given in SMP Table 2, and an assessment of the costs of monitoring the effluent for these constituents.
- d. The SMP of this Order may subsequently be revised to include routine monitoring for all or some of the SMP Table 2 Constituents.
- e. The discharger shall submit technical reports acceptable to the Executive Officer documenting status and results of the study in accordance with the following:

Interim Report:	Submit report no later than:	June 30, 2001.
Final Report:	Submit report no later than:	December 15, 2004.

- f. If the Final Report results indicate exceedances of any constituent above the effluent level of concern listed in Table 2 of SMP Section VII.B., then the discharger shall develop and implement a source control and reduction plan for that constituent within 3 months.

11. Submittal and Implementation a Pollutant Minimization Program (PMP).

The PMP is required by the SIP (Section 2.4.5.1). The goal of the PMP shall be to reduce all potential sources of priority pollutant(s) through pollutant minimization (control) strategies to maintain the effluent concentration at or below a WQBEL. As stated in Finding 39, for constituents which are detected above the new detection limits but below the former analytical quantification limit established, and it is determined the pollutant has reasonable potential to cause or contribute to exceedance of State water quality standards. In the absence of effluent limits, the Discharger shall implement a waste minimization plan to achieve the water quality standards. The program shall include, but not limited to, the following actions and submittals:

<u>Task</u>	<u>Compliance Date</u>
(a) Pollution Minimization Program Plan	Within 6 months, after reasonable potential has been determined and notification by the Executive Officer.

The plan shall include, but is not limited to, (1) an annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer if it is demonstrated source monitoring is unlikely to produce useful analytical data; (2) quarterly monitoring for the priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer if it is demonstrated influent monitoring is unlikely to produce useful analytical data; (3) control strategy design to proceed toward the goal of maintaining concentrations of the priority pollutant(s) in the effluent at or below the effluent limitation, (4) implementation of appropriate cost-effective control measures for the priority pollutant(s), consistent with the control strategy.

(b) <u>Implementation of Plan</u>	30 days after approval by Executive Officer
The discharger shall implement a PMP in order to reduce pollutant loadings to the treatment plant, and subsequently, to receiving waters.	
(c) <u>Quarterly Monitoring</u>	90 days after implementation of PMP, and quarterly thereafter

The discharger will conduct quarterly monitoring for the priority pollutant in the influent to the wastewater treatment system

(d) Annual Report	within 12 months after the implementation of the PMP, and annually thereafter
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The discharger shall submit an Annual Status Report to the Board acceptable to the Executive Officer .

The report should include the following:

- (1) All PMP monitoring results of the previous year, (including quarterly monitoring results);
- (2) A list of potential sources of the priority pollutant(s);

- (3) A summary of all actions undertaken pursuant to the control strategy; and
- (4) A description of actions to be taken in the following year.

12. Compliance Schedule to Implement C.3.b (Final Receiving Water Temperature Limit)

- a. Submit a workplan, acceptable to the Executive Officer, to determine whether an alteration in temperature adversely affects the beneficial uses of the receiving water, by February 1, 2001.
- b. Submit the results of the monitoring, according to the workplan in Provision 12.a, by March 1, 2002.
- c. Implement a contingency plan if necessary, acceptable to the Executive Officer, to address impacts on receiving water beneficial uses (e.g. cooling or storing the effluent on site), by June 1, 2002.

13. Receiving Water Beneficial Use Study Program and Schedule

The discharger may conduct a study, to demonstrate that substituting total coliform organisms limitations with fecal coliform organisms will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. The workplan must be approved by the Executive Officer and the results of the study must conclusively demonstrate that such a substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water and must be approved by the Board.

Task	Compliance Date
(a) <u>Receiving Water Beneficial Use Study Program</u> adoption Submit a proposed program plan, acceptable to the Executive Officer, for data collection and analysis to determine whether the use of fecal coliform as a more specific indicator of human pathogens (instead of total coliform) does not impair beneficial uses in the vicinity of the discharger's outfall.	24 months following permit
(b) <u>Study Program Commencement.</u> Following approval of the program plan by the executive officer, collect data in accordance with the study plan and time schedule. Specific data collection timing is expected to correspond to sequential reductions of chlorine use to determine the proper quantity of chlorine needed to meet fecal coliform criteria.	Commence data collection within 12 months after Executive Officer approval.
(c) <u>Final Report</u> Following data collection, analyze data and submit a report to the executive officer, documenting the results found, including chlorine residual measurements and corresponding fecal and total coliform measurements in effluent and in the receiving water. Document whether use of the fecal coliform indicator is expected to impair beneficial uses.	3 months following end of data collection.

During the study, the discharger is exempt from the total coliform limit for a period not to exceed six months from the start of data collection. If there is a total coliform exceedence during the data collection period, the discharger shall demonstrate the exceedence is due to the study in order for the exemption to apply.

14. Background, Ambient Water Samples

The discharger shall take background, ambient water samples upstream from the facility. This information is required to perform the RP analysis and to determine the effluent limitations.

A sampling program shall be submitted to the Executive Officer for approval, prior to sampling. The discharger may choose to coordinate with other POTWs in the area in order to effectively acquire and submit the same information required of them.

Tasks	Compliance Date
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a. Submit a proposed sampling plan, acceptable to the Executive Officer, to sample background, ambient receiving waters upstream from the facility. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
b. Commence work in a timely fashion in accordance with the sampling plan.	Schedule according to the sampling plan
c. Submit a report, to the Board, documenting the work performed in the sampling plan. Information shall include, but not be limited to: constituent sampled for; sampling results, location of the samples; time the samples were taken; sample methodology used in the lab analysis; QA/QC data; and map showing the location of the sampling site(s) in relation to the location of the discharger.	Annually until completion

15. Special Study – Dioxin Study of the Effluent

In accordance with the SIP, minor dischargers shall conduct effluent monitoring for the seventeen 2, 3, 7, 8-TCDD congeners listed below. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach. Minor dischargers are required to monitor the effluent once during the dry season and once during the wet season for one year in a three year period. The following Toxicity Equivalence Factor (TEF) shall be used by the discharger to determine Toxic Equivalence (TEQ).

<u>Isomer Group</u>	<u>Toxicity Equivalence Factor</u>
2,3,7,8-tetra CDD	1.0
1, 2,3,7,8-penta CDD	1.0
1, 2, 3, 4, 7, 8-HexaCDD	0.1
1, 2, 3, 6, 7, 8-HexaCDD	0.1
1, 2, 3, 7, 8,9-HexaCDD	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDD	0.01
octa CDD	0.0001
2,3,7,8-Tetra CDF	0.1
1,2,3,7,8-Penta CDF	0.05
2,3,4,7,8-Penta CDF	0.5
1, 2, 3, 4, 7, 8-HexaCDF	0.1
1, 2, 3, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 7, 8, 9-HexaCDF	0.1
2, 3, 4, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDF	0.01
1, 2, 3, 4, 7, 8,9-HeptaCDF	0.01
octa CDF	0.0001

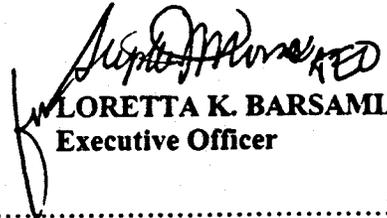
Tasks	Compliance Schedule
a Submit a proposed sampling plan, acceptable to the Executive Officer, to sample the effluent for seventeen congeners. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
b. Following approval by the Executive Officer, commence work in a timely fashion in accordance with the sampling plan.	30 days after approval of study plan
c. Submit a report, to the Board, documenting the work performed in the sampling plan for the seventeen congeners.	Within 45 days of the conclusion of the monitoring

16. **Status Reports on Facility Upgrades.** The discharger shall submit annual status reports on October 31 of each year beginning in 2001. These reports shall be submitted at least annually until the upgraded facility is fully operational, and this permit amended to incorporate new information relevant to the facility. These status reports shall provide detailed discussion of progress made towards finalization of design, construction, and permitting of the upgraded facility, along with projected time schedules for future actions.
17. **Operations and Maintenance Manual:** Annually, the Discharger shall review, and update as necessary, its Operations and Maintenance Manual. The Manual shall be revised to address any significant facility, process or operational changes. Revisions, or a letter stating that no changes are needed, shall be submitted to the Board by April 15 of each year.
18. **Contingency Plan:** Annually, the Discharger shall review, and update as necessary, its contingency plan as required by Board Resolution No. 74-10. Discharge of pollutants in violation of this Order where the Discharger has failed to develop or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board by April 15 of each year.
19. **Evaluation Program:** The Discharger shall implement a program to regularly review and evaluate its wastewater collection, treatment and disposal facilities in order to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained and upgraded as necessary, in order to provide adequate and reliable treatment and disposal of all wastewater from both existing and planned future sources under the Discharger's responsibility.
Status Report: A report discussing the status of this evaluation program, including any recommended or planned actions taken or in progress, shall be submitted to the Board by April 15 of each year.
20. **NPDES Permit:** This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator of the Environmental Protection Agency has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
21. **Application for Permit Reissuance.** The Discharger must file a Report of Waste Discharge (permit application) in application for issuance of new waste discharge requirements and reissuance of this Permit, in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code. This application for permit reissuance must be submitted to the Board no later than 180 days in advance of the expiration date of this Order.
22. **Optional Mass Offset**
- If the discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body needs to be submitted for Board approval. This Order may be modified by the Board to allow an acceptable mass offset program.
23. **Change in Control or Ownership.**
- In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.
 - To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see *Standard Provisions &*

Reporting Requirements, August 1993, Section E.4.) Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

- 24. **Permit Reopener.** The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will or have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.
- 25. **Order Expiration:** This Order expires five years for the date of adoption, on November 29, 2005.

I, Loretta K. Barsamian, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on November 29, 2000.

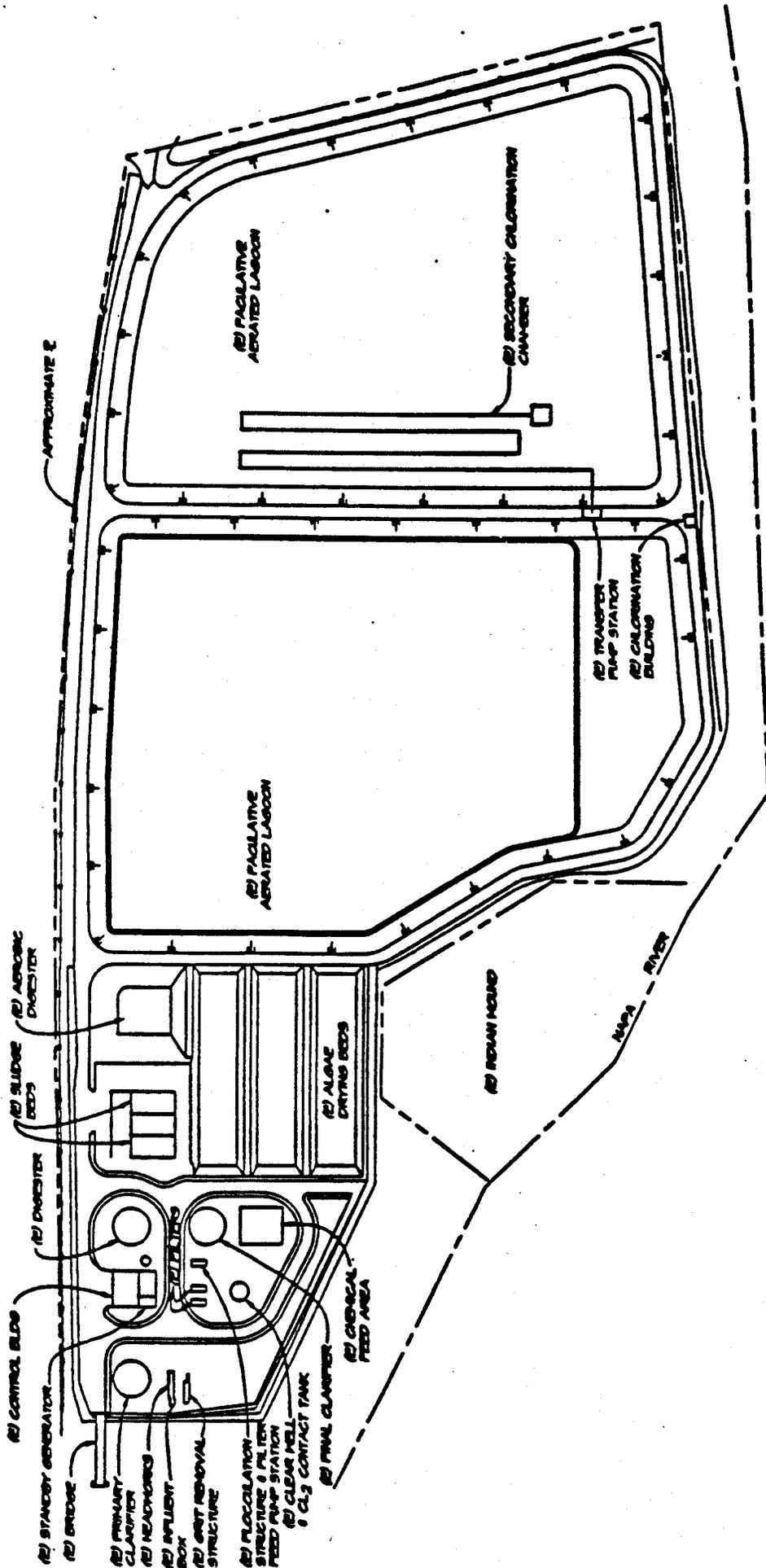

LORETTA K. BARSAMIAN
 Executive Officer

Attachments:

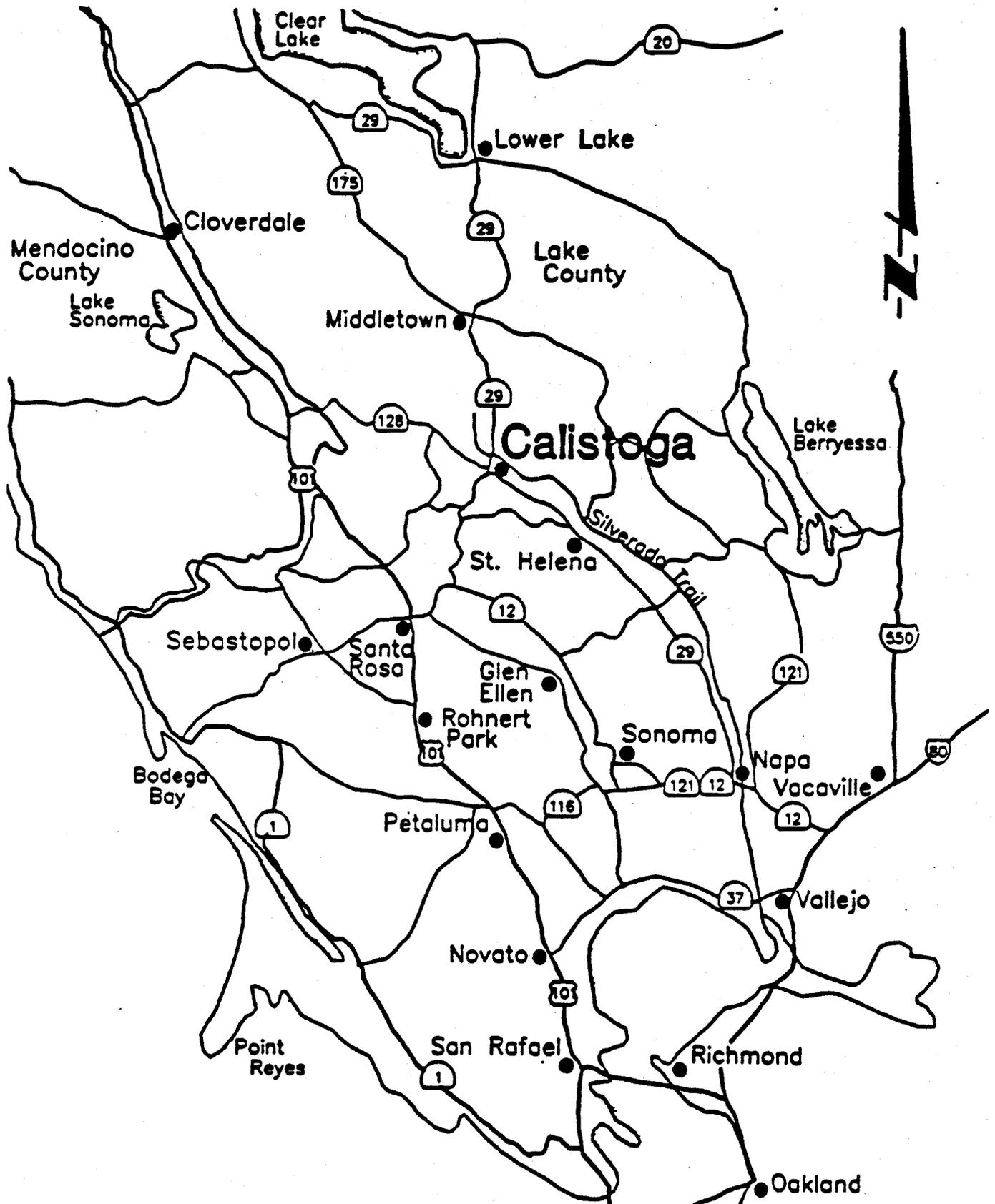
- A. Location Map
- B. Wastewater Site Plan – Existing System
- C. Wastewater Site Plan – Future System
- D. Self-Monitoring Report, Part A – August 1993
- E. Tentative Self-Monitoring Program - Part B
- F. Fact Sheet
- G. Chronic Toxicity – Definition of Terms and Screening Phase Requirements
- H. Standard Provisions and Reporting Requirements – August 1993
- I. Regional Board Resolution 74-10

[File No. 2139.3003 (JN)]

Existing WWTP Site Plan

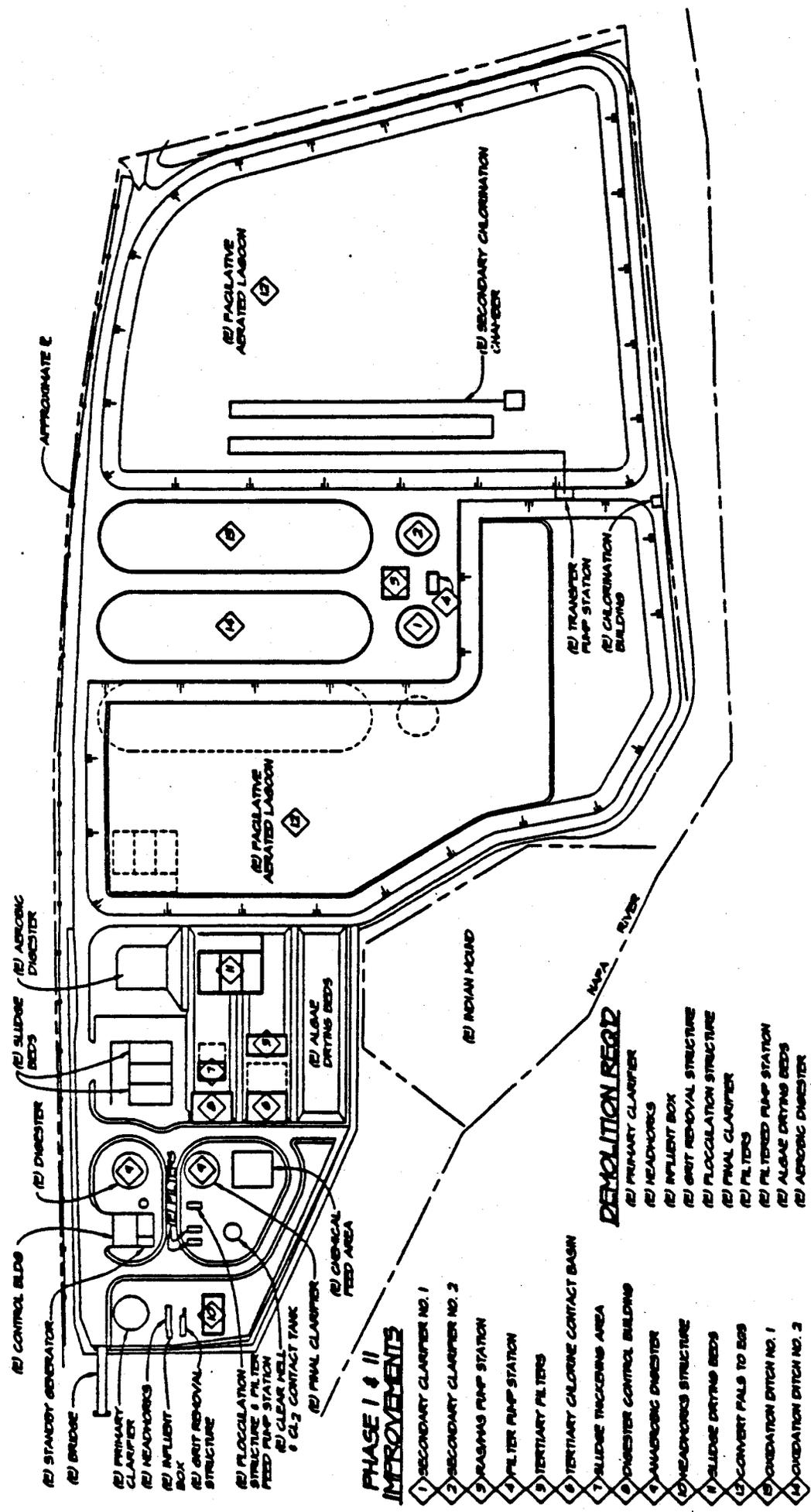


Regional Location



Phase II and III Proposed Improvements to WWTP

NOTE:
DASHED LINES REPRESENT ADDITIONAL UNITS
BEING FOR PHASE III. BUILD OUT CONDITION
IN YEAR 2008.



Source: Summit Engineering, Inc.

August 1993

**SELF-MONITORING PROGRAM
PART A**

NPDES PERMITS

A. BASIS AND PURPOSE

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383 and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the 40 CFR S136 or other methods approved and specified by the Executive Officer of this Regional Board (See Part B).

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DOHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by the DOHS. The director of the laboratory whose name appears on the certification or his/her laboratory supervisor who is directly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance/quality control procedures in his or her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. SPECIFICATIONS FOR SAMPLING AND ANALYSES

The discharger is required to perform sampling and analyses according to the schedule in Part B in accordance with the following conditions:

1. Influent

Composite samples of influent shall be collected on varying days selected at random and shall not include any plant recirculation or other sides stream wastes. Deviation from this must be approved by the Executive Officer.

2. Effluent

a. Composite samples of effluent shall be collected on days coincident with influent composite sampling unless otherwise stipulated. At least one sampling day in each seven shall reflect one day of weekend discharge, one day of peak loading and during major unit operation shutdown or startup. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the EO's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

flows b. Grab samples of effluent shall be collected during periods of maximum peak and shall coincide with effluent composite sample days.

c. Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

1) Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

2) Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

d. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

e. If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

f. If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

frequently as effluent minutes until g. Chlorine residual analyzers shall be calibrated against grab samples as necessary to maintain accurate control and reliable operation. If an violation is detected, grab samples shall be collected at least every 30 compliance is achieved.

daily limits h. When any type of bypass occurs, composite samples shall be collected on a basis for all constituents at all affected discharge points which have effluent for the duration of the bypass.

3. Storm Water

If all storm water is not directed back to the headworks during the wet season (October 1 to April 30) the discharger shall:

a. Conduct visual observations of the storm water discharge locations on at least one storm event per month that produces significant storm water discharge to

observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

- b. Measure (or estimate) the total volume of storm water discharge and collect and analyze grab samples of storm water discharge from at least two storm events that produce significant storm water discharge for: oil and grease, pH, total suspended solids (TSS), specific conductance, and toxic chemicals and other pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

discharge.
impracticable,
and the
sample(s)

The grab sample(s) shall be taken during the first thirty minutes of the discharge.
If the collection of the grab sample(s) during the first 30 minutes is impracticable, the grab sample(s) can be taken during the first hour of the discharge, and the discharger shall explain in the annual monitoring report why the grab sample(s) could not be taken in the first 30 minutes.

- c. Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May to September) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; and/or analysis and validation of accurate piping schematics. Records shall be maintained of the description of the method used, date of testing, locations observed, and test results.

- d. Samples shall be collected from all locations where storm water is discharged. Samples must represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the discharger may sample a reduced number of locations if it is established and documented in the monitoring program that storm water discharges from different locations are substantially identical.

- e. Records of all storm water monitoring information and copies of all reports required by this permit shall be retained for a period of at least three years from the date of sample, observation, or report.

4. Receiving Waters:

- a. Receiving water samples shall be collected on days coincident with composite sampling of effluent.
- b. Receiving water samples shall be collected at each station on each sampling day during the period within 1 hour following low slack water. Where sampling at lower slack water period is not practical, sampling shall be performed during higher slack water period. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated.
- c. Samples shall be collected within one foot below the surface of the receiving water body, unless otherwise stipulated.

5. Bottom Sediment Samples and Sampling and Reporting Guidelines

- a. Bottom sediment sample means: (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters.

or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.

Physical-chemical sample analyses include as a minimum:

- 1) pH
- 2) TOC (Total Organic Carbon)
- 3) Grease analysis:
 - (a) Mg grease per kg sediment
 - (b) Percent fraction of hydrocarbon in grease
- 4) Selected metals (depending on industrial input) mg/kg dry wt (and soluble metals in mg/l).
- 5) Particle size distribution, i.e. , % sand, % silt-clay
- 6) Depth of water at sampling station in meters
- 7) Water salinity and temperature in the water column within one meter of the bottom.

D. STANDARD OBSERVATIONS

1. Receiving Water

- and
- area.
- NOAA
- a. Floating and suspended materials of waste origin (to include oil, grease, algae, other macroscopic particulate matter: presence or absence, source, and size of affected area.
 - b. Discoloration and turbidity: description of color, source, and size of affected area.
 - c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
 - d. Evidence of beneficial water use: presence of water—associated waterfowl or wildlife, fishermen, and other recreational activities in the vicinity of the sampling stations.
 - e. Hydrographic condition:
 - 1) Time and height of corrected high and low tides (corrected to nearest location for the sampling date and time of sample and collection).
 - 2) Depth of water columns and sampling depths.

f. **Weather conditions:**

- 1) Air temperatures.
- 2) Wind — direction and estimated velocity.
- 3) Total precipitation during the previous five days and on the day of observation.

2. Wastewater Effluent

- and
- a. Floating and suspended material of waste origin (to include oil, grease, algae, other macroscopic particulate matter): presence or absence
 - b. Odor: presence or absence, characterization, source, distance of travel.

3. Beach and Shoreline

- a. Material of waste origin: presence or absence, description of material, estimated size of affected area, and source.
- b. beneficial use: estimate number of people sunbathing, swimming, water-skiing, surfing, etc.

4. Land Retention or Disposal Area

This applies both to liquid and solid wastes confined or unconfined.

- a. For each impoundment determine amount of the freeboard at lowest point of dikes confining liquid wastes.
- b. Evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (gpm, etc.)
- c. Odor: presence or absence, characterization, source, and distance of travel.
- d. Estimated number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities

- a. Odor: presence or absence, characterization, source, and distance of travel.
- b. Weather condition: wind direction and estimated velocity

E. RECORDS TO BE MAINTAINED

1. Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the discharger and accessible (at the waste treatment plant), and retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when

requested by the Regional Board or Regional Administrator of the USEPA, Region IX. Such records shall show the following for each sample:

- a. Identity of sampling and observation stations by number.
 - b. Date and time of sampling and/or observations.
 - c. Method of composite sampling (See Section G -Definition of Terms)
 - d. Type of fish bioassay test (96 hour static or flow-through bioassay)
 - e. Date and time that analyses are started and completed, and name of personnel performing the analyses.
 - f. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to specific section of Standard Methods is satisfactory.
 - g. Calculations of results.
 - h. Results of analyses and/or observations.
2. A tabulation shall be maintained showing the following flow data for influent and effluent stations and disposal areas:
- a. Total waste flow or volume, for each day.
 - b. Maximum and minimum daily flows for each month.
3. A tabulation shall be maintained showing the following information for all other plant wastes and disposal areas:
- a. Total monthly volume of grit, skimming, and undigested sludge (in cubic yards or cubic feet) from each treatment unit and the disposal site location
 - b. Total monthly volume and solids content of dewatered sludge from each treatment unit (in cubic yards or cubic feet) and the disposal site location.
4. A tabulation reflecting bypassing and accidental waste spills shall be maintained showing information items listed in Sections E -1 and E-2 for each occurrence.
5. A chronological log for each month shall be maintained of the effluent disinfection and bacterial analyses, showing the following:
- a. Date and time each sample is collected and waste flow rate at time of collection.
 - b. Chlorine residual, contact time, and dosage (in kilograms per day and parts per million).
 - c. Coliform count for each sample
 - d. Moving median coliform of the number of samples specified by waste discharge requirements.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Spill Reports

A report shall be made of any spill of oil or other hazardous material. Spills shall be reported to this Regional Board, at (510) 286-1255 on weekdays during office hours from 8 AM to 5 PM, and to the Office of Emergency Services at (800) 852-7550 during non office hours, and the U.S. Coast Guard at (415) 437-3091 (if the spill is into navigable waters) by telephone immediately after occurrence. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to:

- a. nature of waste or pollutant,
- b. quantity involved,
- c. duration of incident,
- d. cause of spill,
- e. SPCC Spill Prevention and Containment Plan in effect, if any,
- f. estimated size of affected area,
- g. nature of effects (i.e., fishkill, discoloration of receiving water, etc.),
- h. corrective measures that have been taken or planned, and a schedule of these activities, and
- i. persons notified.

2. Reports of Plant Bypass, Treatment Unit Bypass and Permit Violation

In the event the discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

- or
- a. Maintenance work, power failures, or breakdown of waste treatment equipment,
 - b. accidents caused by human error or negligence, or
 - c. other causes, such as acts of nature,

or

the discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification. The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day (Section C.2.h). Such

daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self—Monitoring Report.

3. The discharger shall file a written technical report to be received at least 30 days prior to advertising for bid (60 days prior to construction) on any construction project which would cause or aggravate the discharge of waste in violation of requirements; said reports shall describe the nature, cost, and scheduling of all actions necessary to preclude such discharge. In no case will any discharge of wastes in violation of permit and order be permitted unless notification is made to the Executive Officer and approval obtained from the Regional Board.

4. Self—Monitoring Reports

Written reports shall be filed regularly for each calendar month (unless specified otherwise) and filed no later than the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

Such A letter transmitting self-monitoring reports should accompany each report. a letter shall include:

- during
- 1) Identification of all violations of waste discharge requirements found the reporting period,
 - 2) Details of the magnitude, frequency, and dates of all violations,
 - 3) The cause of the violations, and
 - 4) Discussion of the corrective actions taken or planned and the time schedule for completion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory.

Monitoring reports and the letter transmitting reports shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person.

The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format will be prepared using the example shown in Part B. The discharger will prepare the format using those parameters and requirement limits for receiving water and effluent constituents specified in his permit.

c. **Map or Aerial Photograph**

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. **Results of Analyses and Observations**

date,
director. Tabulations of the results from each required analysis specified in Part B by time, type of sample, detection limit and station, signed by the laboratory. The report format will be prepared using the examples shown in Part B.

1) If the discharger monitors any pollutant more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or as specified in this Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Self-Monitoring Report.

shall 2) Calculations for all limitations that require averaging of measurements utilize an arithmetic mean unless otherwise specified in this permit..

e. **Effluent Data Summary**

Summary tabulations of the data shall include for each constituent total number of analyses, maximum, minimum, and average values for each period. The report format will be the NPDES Discharge Monitoring Report., EPA Form 3320-1. Flow data shall be included. The original is to be submitted to:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

f. **Flow Data**

The tabulation pursuant to Section F-2.

5. **Annual Reporting**

Regional By January 30 of each year, the discharger shall submit an annual report to the Board covering the previous calendar year. The report shall contain :

- previous
- a. Both tabular and graphical summaries of the monitoring data during the year.
 - b. A comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
 - c. List of Approved Analyses
 - 1) Listing of analyses for which the discharger is approved by the State Department of Health Services.
 - 2) List of analyses performed for the discharger by another approved (and copies of reports signed by the laboratory director of that shall also be submitted as part of the report).
 - 3) List of "waived" analyses, as approved.
- laboratory
laboratory

The report format shall be prepared by using the examples shown in Part B.

G. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with daily maximum limits and instantaneous maximum limits. Grab samples represent only the condition that exists at the time the wastewater is collected.
2. A composite sample is defined as a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate (or highest concentration) of waste flow corresponding to each grab sample collected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the period of discharge for 8 consecutive or of 24 consecutive hours, whichever is specified in Table 1 of Part B
3. A flow sample is defined as the accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.
4. Duly authorized representative is one whose:
 - a. Authorization is made in writing by a principal executive officer or ranking elected official;
 - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for

environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

5. Average values for daily and monthly values is obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period.
6. Median of an ordered set of values is that value below and above which there is an equal number of values, or which is the arithmetic mean of the two middle values, if there is no one middle value.
- a. A 5-day median value for coliform bacteria is the third highest count of 5 daily counts obtained from 5 consecutive sampling days. A 7-day median value is the fourth highest of 7 daily counts obtained from 7 consecutive sampling days.
- b. A 5-day moving median value for coliform bacteria is the median value calculated for each consecutive sampling day based upon the period from the sample day and the previous 4 sampling days.
- c. A 7-day moving median is calculated for each consecutive sampling day based upon the period from the sample day and the previous 6 sampling days. Moving median values for the beginning of the month shall be calculated using the previous month's counts (i.e. the last four counts for a 5-day moving median and the last seven counts for a 7-day moving median from the previous month).
7. A 6-month median means a moving median of daily values for any 180 day period in which daily values represent flow-weighted average concentrations within a daily or 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.
8. The geometric mean is anti log of log mean. Used for determining compliance with bacteriological standards, the lcg mean is calculated with the following equation:

$$\text{Log Mean} = \frac{\sum_{i=1}^N \text{Log } C_i}{N}$$

in which "N" is the number of days samples that were analyze during the period and "C_i" is the concentration of bacteria (MPN/100 ml) found on each day of sampling.

9. Daily Maximum limit is the total discharge in a calendar day for pollutants measured by mass or the average measurement obtained for other pollutants.
10. Instantaneous Maximum is defined as the highest measurement obtained for the calendar day, as determined by a grab sample..
11. A depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled and shall be collected in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

12. Bottom sediment sampling and reporting guidelines mean those guidelines developed by the Regional Board staff to provide for standard bottom sampling, laboratory, and reporting procedures.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM

FOR

**CITY of CALISTOGA
WASTEWATER TREATMENT PLANT**

CALISTOGA, NAPA COUNTY

NPDES PERMIT NO. CA0037966

ORDER NO. 00-131

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I. BASIS and PURPOSE

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268 and 13387 (b) of the California Water Code and this Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring, are to: (1) document compliance with waste discharge requirements established by the Board, (2) facilitate self-policing by the discharger in prevention and abatement of pollution arising from waste discharges, (3) develop or assist in development of effluent limitations or other waste discharge requirements, pretreatment standards, whole effluent toxicity standards and other regional, state or national standards of performance, and (4) prepare water and wastewater quality inventories.

II. SAMPLING and ANALYTICAL METHODS

Sample collection, handling, storage and analyses shall be performed in accordance with regulations given in Code of Federal Regulations Title 40, Part 136 (40 CFR 136) or other methods approved and specified by the Board's Executive Officer.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DOHS) through the DOHS laboratory certification program or by a laboratory for which waiver from such certification has been provided by the Executive Officer.

The director of the laboratory whose name appears on the DOHS laboratory certification, or the director's authorized designee who is directly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance and quality control procedures, and shall sign all reports of such work conducted as part of this Self-Monitoring Program.

All monitoring instruments and equipment shall be properly calibrated and maintained in order to ensure accuracy of monitoring sampling and measurements.

III. DEFINITION of TERMS

A. Types of Samples

1. *Grab Sample.* A grab sample is an individual sample collected at an identified time. A grab sample represents only the conditions that exist at the time the sample is collected. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may not necessarily correspond with periods of peak hydraulic conditions. Grab samples are used primarily in determining compliance with daily maximum and instantaneous maximum or minimum limits.
2. *Composite Sample.* A composite sample is a sample composed of multiple individual grab samples collected at regular intervals throughout a given period of time, with the individual grab samples mixed in proportion to the instantaneous waste flow rate at the time of each grab sample. For composite sampling required by this SMP, grab sample intervals shall not exceed one hour, sample proportioning shall not vary by more than five percent of the flow rate, and compositing period shall not exceed 24 hours.
3. *Flow Sample.* A flow sample is defined as the accurate measurement of either a volumetric flow rate or flow volume using a properly calibrated and maintained flow measuring device. Flows are typically reported as Average Daily Flow which is the average flow rate during a 24-hour calendar day, and typically reported in units of million gallons per day (mgd).

B. Statistical Parameters

1. *Average.* Average is the arithmetic mean (i.e., the sum all values in a given data set, divided by the total number of values). A monthly average is the sum of the test result values from all samples collected in the month, divided by the number of samples.
2. *Median.* The median is the middle value of an ordered set of values (i.e., the value in the ordered set for which there is an equal number of values both greater than and less than this middle value). If the data set is an even number of values, then the median is the average of the two middle values.
3. *Log mean.* The log mean is the summation of the log values of each data set value, divided by the number of values in the set. The log mean is given by the following equation:

$$\text{Log mean} = (1/n) \left(\sum_{i=1}^{i=n} \text{Log} (C_i) \right) \quad \text{where: } n \text{ is the number of data set values; and } C_i \text{ is the individual datum value.}$$

4. *Geometric Mean.* The geometric mean is the anti-log of the log mean of a given data set.

- C. Freeboard. Pond freeboard is the vertical measurement of the distance between the pond water surface and the top of the pond perimeter enclosure (levee). If pond enclosure is not level, measurement is to the lowest elevation point of the enclosure (e.g., lowest point of levee top).

IV. DESCRIPTION OF SAMPLING STATIONS

Station Description

A. INFLUENT

A-001 At a point in the treatment facility headworks at which all waste tributary to the treatment process system is present and preceding any phase of treatment.

B. EFFLUENT

E-001 At a point in the effluent from the tertiary treatment facilities prior to the point of discharge, and at which point treatment of the wastewater is complete, and all waste tributary to the effluent discharge outfall is present (also called E-1).

E-002 At a point in the effluent from the secondary treatment facilities (oxidation pond 2) prior to discharge through the secondary effluent discharge outfall, at which point all waste tributary to the discharge is present.

C. RECEIVING WATERS

C-1 At a point in the Napa River, located about 500 feet upstream from the E-001 outfall.

C-2 At a point in the Napa River, located about 100 feet upstream from the E-001 outfall.

C-3 At a point in the Napa River, located at the point of discharge where the E-001 outfall pipe discharges into the Napa River.

C-4 At a point in the Napa River, located about 100 feet downstream from the E-001 outfall.

C-5 At a point in the Napa River, located about 100 feet downstream from the E-002 outfall.

C-6 At a point in the Napa River, located about 1,000 feet downstream from the E-001 outfall.

D. LAND OBSERVATIONS

L-'n' Pond Levees: Points located along the perimeter levees of the wastewater ponds, at about equidistant intervals not to exceed 500 feet.

P-'n' Plant Perimeter: Points located along the perimeter boundary of the wastewater treatment plant, at about equidistant intervals, not to exceed 1000 feet.

E. OVERFLOWS

OV-'n' At points in the collection system including manholes, pump stations, or any other location where overflows occur.

F. **BYPASSES**

B-'n' At a point in the treatment process where a bypass of either primary or secondary treatment occurs.

- Notes:
- (1) A map of current monitoring station locations is included as the last page of this SMP.
 - (2) A map or plan view drawing showing current monitoring station locations shall be included in the Annual Report, and in the monthly report if stations change.

V. SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS

Monitoring shall be conducted in accordance with the following schedule:

**TABLE 1
SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS**

Sampling Station:			A-001		E-001		E-002:		C	L	P	O
Type of Sample:			G	C-24	G	C-24	G	C-24	G	O	O	O
Parameter	(units)	Notes	1	1			2	2	2	1	1	17
Flow Rate	(MGD)	3		Cont		Cont		Cont.				E
BOD ₅ 20°C	(mg/L)	4		W		W ¹		W				D
TSS	(mg/L)	4		W		W ¹		W				
Oil & Grease	(mg/L)	5				M ¹		M				
Settleable Matter	(ml/L-hr)					W ¹		W				
Turbidity	(NTU)					W ¹		W		M		
pH	(units)		W			Cont 1		Cont		M		
Temperature	(°C)	6	W			W ¹		W		M		
D.O.	(mg/L)		W			W ¹		W		M		
Total Coliform	(MPN/100ml)	7				3/W		3/W				D
Chlorine Residual	(mg/L)	7				Cont. 1		Cont.				
Acute Toxicity	(% Survival)	8					M ²		M			
Chronic Toxicity		9					Y ²		Y			
Metals	(µg/L)	10					M ²		M			
Cyanide	(µg/L)	11					M ²		M			
Table 2 Selected Constituents	(ug/L)	12				Y ²		Y				
Nitrogens	(mg/L as N)	13				M ²		M		M		
Total Phosphate	(mg/L)					M ²		M		M		
Un-ionized Ammonia	(mg/L)									M		
Conductivity	(µmhos/cm)									M		
Hardness	(mg/L as CaCO ₃)									M		
TDS	(mg/L)					M ¹				M		
River Flow	(cfs or MGD)	14						D		D		
Discharge Dilution	(ratio)	14						D		D		
Precipitation	(inches)	15									M	
Applicable Standard Observations		16						D		W	M	M

Bypass Sampling	18									
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V. SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS (continued)
LEGEND FOR TABLE 1

Sampling Stations:

- A = treatment facility influent
- C = receiving water flows)
- E = treatment facility effluent
- G = ground water
- L = pond levees
- OV = overflow points
- P = treatment facility perimeter points

Types of Samples:

- C-24 = composite sample, 24 hours (includes continuous sampling, such as for
- G = grab sample
- O = observation

Frequency of Sampling:

- Cont= continuous
- D = once each day
- E = each occurrence
- H = once each hour (at about hourly intervals)
- M = once each month
- Q = once each calendar quarter (at about three month intervals)
- W = once each week
- Y = once each calendar year
- 2/Y = twice each calendar year (at about 6 months intervals)
- 3/W = three times each calendar week (on separate days)

Parameter and Unit Abbreviations:

- BOD₅, 20°C = Biochemical Oxygen Demand, 5-day, at 20 °C
- cfs = cubic feet per second
- D.O. = Dissolved Oxygen
- Metals = multiple metals; See Table 1 footnotes
- PAHs = Polynuclear Aromatic Hydrocarbons.
- TDS = Total Dissolved Solids
- TSS = Total Suspended Solids
- MGD = million gallons per day
- mg/L = milligrams per liter
- ml/L-hr = milliliters per liter, per hour
- µg/L = micrograms per liter
- kg/d = kilograms per day
- MPN/100 ml = Most Probable Number per 100 milliliters

FOOTNOTES FOR TABLE 1

Additional details regarding sampling, analyses and observations are given in Section VI of this SMP, *Specifications for Sampling, Analyses and Observations* (SMP Section VI). The following footnotes provide cross references to the applicable sections.

- | | | |
|-------------------------------------|------------------|------------------------------------|
| [1] Year-round sampling | See SMP Section: | VI. 1. |
| [2] River discharge period sampling | See SMP Section: | VI. 2. |
| [3] Flow monitoring | See SMP Section: | VI. 3. |
| [4] BOD & TSS monitoring | See SMP Section: | VI. 4. |
| [5] Oil & Grease monitoring | See SMP Section: | VI. 5. |
| [6] Temperature monitoring | See SMP Section: | VI. 6. |
| [7] Disinfection Process monitoring | See SMP Section: | VI. 7. |
| [8] Acute Toxicity monitoring | See SMP Section: | VI. 8., and Order Provision F.7. |
| [9] Chronic Toxicity monitoring | See SMP Section: | VI. 9., and Order Provision F.8. |
| [10] Metals | See SMP Section: | VI. 10. |
| [11] Cyanide | See SMP Section: | VI. 11. |
| [12] Table 2 Selected Constituents | See SMP Section | VI. 12., and Order Provision F. 10 |
| [13] Nitrogens | See SMP Section: | VI. 13. |

[14]	River Flow & Discharge Dilution	See SMP Section:	VI. 14.
[15]	Precipitation	See SMP Section:	VI. 15.
[16]	Standard Observations	See SMP Section:	VI. 16.
[17]	Overflow monitoring	See SMP Sections:	VI. 17, and VII. E.VI.
[18]	Bypass monitoring	See SMP Sections:	VI. 18

VI. SPECIFICATIONS for SAMPLING, ANALYSES and OBSERVATIONS

Sampling, analyses and observations, and recording and reporting of results shall be conducted in accordance with the schedule given in Table 1 of this SMP, and in accordance with the following specifications, as well as all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

1. Year-round Monitoring.

- a. Monitoring indicated in Table 1 with an associated footnote '1' is required during the entire year.
- b. Influent monitoring is required during the entire year. Monitoring indicated in Table 1 is the minimum required. Additional sampling and analyses may be conducted or necessary in order to properly operate and maintain treatment processes. All monitoring data obtained shall be included in reporting results of monitoring parameters required by this SMP.
- c. Effluent monitoring is required during the entire year for selected parameters (Flow, conventional parameters and disinfection process). Monitoring indicated in Table 1 is the minimum required. Additional sampling and analyses may be conducted or necessary in order to properly operate and maintain treatment processes. All monitoring data obtained shall be included in reporting results of monitoring parameters required by this SMP.
- d. Effluent sampling and analyses in addition to that indicated in Table 1 may be required for discharges to land, as specified in the Water Reuse Requirements adopted for the Discharger's water reuse/reclamation program.

2. River-Discharge Period Monitoring.

- a. Monitoring indicated in Table 1 with an associated footnote '2' is required only during periods of discharge to the Napa River. Where more than one frequency is shown in the table, the right value applies to river-discharge period monitoring (the left value applies to year-round monitoring).
- b. Effluent monitoring identified is the minimum required for purposes of monitoring effluent discharges to the Napa River in accordance with this Permit. Additional sampling and analyses may be conducted or necessary in order to properly operate and maintain treatment processes. All monitoring data obtained shall be included in reporting results of monitoring parameters required by this SMP.

- c. **Composite Sampling.** Composite samples shall be collected as composites of hourly grab samples (see definitions above). For discharge events that are less than 24 hours in duration, composite samples shall be collected as composites of hourly grab samples collected for the duration of the discharge event. If a discharge event continues for more than 24 hours, sampling shall be restarted so that any one composite sample does not exceed a 24-hour composite.

3. Flow Monitoring.

- a. Flow monitoring indicated as 'Cont' (continuous) in Table 1 shall be conducted by continuous measurement of flows, and reporting as given below:

<u>Reporting Parameter</u>	<u>(Units)</u>	<u>Influent (A-001)</u>		<u>Effluent (E-001, E-002)</u>	
		<u>Daily</u>	<u>Monthly</u>	<u>Daily</u>	<u>Monthly</u>
(1) Maximum Daily Flow	(MGD)	X	X
(2) Minimum Daily Flow	(MGD)		X		X
(3) Average Daily Flow	(MGD)	X	X	X	X
(4) Total Flow Volume	(MG)		X	X	X
(5) Total discharge duration	(days; hours)			X	X

- b. For all discharges to the Napa River, the calendar dates during which discharges occur shall be reported.

4. BOD and TSS Monitoring.

- a. *Sampling Frequency.*

Influent and Effluent sampling for BOD and TSS analyses shall be conducted as follows:

- (1) Influent (A-001), Year-round:

Weekly (one day each calendar week) during the entire year.

- (2) Effluent (E-001), Year Round, (E-002):

Weekly (one day each calendar week) during which effluent discharges to the river occur.

- b. *Percent Removal.*

Monthly average percent removal for both BOD and TSS shall be determined and reported for each calendar month for each of the effluent sampling stations during the entire year.

5. Oil & Grease Monitoring.

Each Oil and Grease sample event shall consist of three grab samples taken at equal intervals during the sampling date. Each grab sample shall be collected in a separate glass container, and analyzed separately. Results shall be reported as a weighted average of the three analysis result values, based upon the instantaneous flow rates occurring at the time of each grab sample.

6. Temperature Monitoring.

The temperature monitoring shall insure compliance with the Receiving Water Temperature Limitations-C.3 of the Order., and be implemented according the compliance schedule described in Provision F.12 of the Order.

7. Disinfection Process Monitoring.

a. *Bacteriological Quality (Total Coliform)(E-001, E-002)*

Effluent discharged to the Napa River shall be sampled and analyzed for Total Coliform at least three days per week, for the duration of all discharges.

b. *Chlorine Residual Monitoring (E-001, E-002).*

During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored in accordance with the following:

(1) Frequency.

Chlorine residual concentrations shall be monitored continuously.

(2) Sample Points.

Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination (see also, b.5. below).

(3) Reporting - Concentrations.

Report, on a daily basis, the average, maximum and minimum chlorine residual concentrations, for samples taken both prior to and following dechlorination (see also, b.5. below).

(4) Reporting - Daily Dosage.

Report, on a daily basis, the total chlorine dosage (kg/day or lbs/day).

(5) Dechlorination Monitoring (E-001 & E-002).

Dechlorination of effluent is required for effluent discharged to the Napa River. Chlorine residual monitoring of dechlorinated effluent is required for all discharges to the river.

Dechlorination is not required for effluent discharged to land through reclamation/reuse.

Therefore, chlorine residual monitoring of dechlorinated effluent is not required for effluent discharged to land.

8. Acute Toxicity Monitoring (Flow-through bioassay tests).

a. Acute toxicity shall be monitored by means of 96-hour, static renewal bioassay tests.

b. Acute toxicity shall be determined using undiluted, disinfected and dechlorinated effluent.

c. The following parameters shall be measured and reported for the bioassay sample water, daily, for the duration of the test: pH, Temperature, Dissolved Oxygen and Ammonia Nitrogen.

d. Provision F.7 of this Order applies to this acute toxicity bioassay monitoring.

9. Chronic Toxicity Monitoring: See Provision F.8.. and Attachment C of this Order.

10. Metals:

a. The parameter 'Metals' in this SMP means all of the following constituents:

- | | | |
|------------------|--------------|-----------------|
| (1) Arsenic, | (4) Copper, | (7) Nickel, |
| (2) Cadmium, | (5) Lead, | (8) Selenium |
| (3) Chromium VI, | (6) Mercury, | (9) Silver, and |
| (10)Zinc. | | |

b. For Chromium, monitoring may be conducted by measurement of either Chromium VI or of Total Chromium.

11. Cyanide

Compliance may be demonstrated by measurement of total cyanide or weak acid dissociable cyanide.

12. SELECTED CONSTITUENTS MONITORING

A. Table 2 - Selected Constituents

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1.	Antimony					10	5	50	0.5	5	0.5		1000
2.	Arsenic				20		2	10	2	2	1		1000
3.	Beryllium					20	0.5	2	0.5	1			1000
4.	Cadmium				10	0.5	10	0.25	0.5				1000
5a.	Chromium (III) (c)												
5b.	Chromium (VI)				10	5							1000
6.	Copper (d)					25	5	10	0.5	2			1000
7.	Lead					20	5	5	0.5	2			10,000
8.	Mercury (e)								0.5			0.2	
9.	Nickel					50	5	20	1	5			1000
10.	Selenium						5	10	2	5	1		1000
11.	Silver					10	1	10	0.25	2			1000
12.	Thallium					10	2	10	1	5			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
15.	Asbestos (c) (f)												
16.	2, 3, 7, 8-TCDD (Dioxin) (c)												
17.	Acrolein	2.0	5										
18.	Acrylonitrile	2.0	2										
19.	Benzene	0.5	2										
20.	Bromoform	0.5	2										
21.	Carbon Tetrachloride	0.5	2										
22.	Chlorobenzene	0.5	2										
23.	Chlorodibromomethane	0.5	2										
24.	Chloroethane	0.5	2										
25.	2-Chloroethylvinyl	1	1										

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
	Ether												
26.	Chloroform	0.5	2										
27.	Dichlorobromomethane	0.5	2										
28.	1,1-Dichloroethane	0.5	1										
29.	1,2-Dichloroethane	0.5	2										
30.	1, 1-Dichloroethylene or 1,1 Dichloroethene	0.5	2										
31.	1, 2-Dichloropropane	0.5	1										
32.	1, 3 - Dichloropropylene or 1,3-Dichloropropene	0.5	2										
33.	Ethylbenzene	0.5	2										
34.	Methyl Bromide	1.0	2										
35.	Methyl Chloride or Chloromethane	0.5	2										
36.	Methylene Chloride or Dichloromethane	0.5	2										
37.	1,1, 2,2- Tetrachloroethane	0.5	1										
38.	Tetrachloroethylene	0.5	2										
39.	Toluene	0.5	2										
40.	1,2-Trans- Dichloroethylene	0.5	1										
41.	1,1,1-Trichloroethane	0.5	2										
42.	1,1,2-Trichloroethane	0.5	2										
43.	Trichloroethylene or Trichloroethene	0.5	2										
44.	Vinyl Chloride	0.5	2										
45.	2-Chlorophenol	2	5										
46.	2, 4 Dichlorophenol	1	5										
47.	2,4-Dimethylphenol	1	2										
48.	2-Methyl-4,6- Dinitrophenol or Dinitro-2-methylphenol	10	5										
49.	2,4-Dinitrophenol	5	5										
50.	2-Nitrophenol		10										
51.	4-Nitrophenol	5	10										
52.	4-chloro-3- methylphenol	5	1										
53.	Pentachlorophenol	1	5										
54.	Phenol (g)	1	1		50								
55.	2, 4, 6 Trichlorophenol	10	10										
56.	Acenaphthene	1	1	0.5									
57.	Acenaphthylene		10	0.2									
58.	Anthracene		10	2									
59.	Benzidine		5										
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	10	5										
61.	Benzo(a)Pyrene		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene		10	10									
63.	Benzo(ghi)Perylene		5	0.1									

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
64.	Benzo(k)Fluoranthene		10	2									
65.	Bis(2-Chloroethoxy) Methane		5										
66.	Bis(2-Chloroethyl) Ether	10	1										
67.	Bis(2-Chloroisopropyl) Ether	10	2										
68.	Bis(2-Ethylhexyl) Phthalate	10	5										
69.	4-Bromophenyl Phenyl Ether	10	5										
70.	Burylbenzyl Phthalate	10	10										
71.	2-Chloronaphthalene		10										
72.	4-Chlorophenyl Phenyl Ether		5										
73.	Chrysene		10	5									
74.	Dibenzo(a,h) Anthracene		10	0.1									
75.	1, 2 Dichlorobenzene (volatile)	0.5	2										
	1, 2 Dichlorobenzene (semi-volatile)	2	2										
76.	1, 3 Dichlorobenzene (volatile)	0.5	2										
	1, 3 Dichlorobenzene (semi-volatile)	2	1										
77.	1, 4 Dichlorobenzene (volatile)	0.5	2										
	1, 4 Dichlorobenzene (semi-volatile)	2	1										
78.	3,3'-Dichlorobenzidine		5										
79.	Diethyl Phthalate	10	2										
80.	Dimethyl Phthalate	10	2										
81.	Di-n-Butyl Phthalate		10										
82.	2,4-Dinitrotoluene	10	5										
83.	2,6-Dinitrotoluene		5										
84.	Di-n-Octyl Phthalate		10										
85.	1,2-Diphenylhydrazine		1										
86.	Fluoranthene	10	1	0.05									
87.	Fluorene		10	0.1									
88.	Hexachlorobenzene	5	1										
89.	Hexachlorobutadiene	5	1										
90.	Hexachlorocyclopentadiene	5	5										
91.	Hexachloroethane	5	1										
92.	Indeno(1,2,3-cd)Pyrene		10	0.05									
93.	Isophorone	10	1										
94.	Naphthalene	10	1	0.2									
95.	Nitrobenzene	10	1										
96.	N-Nitrosodimethylamine	10	5										
97.	N-Nitrosodi-n-Propylamine	10	5										
98.	N-	10	1										

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYDRIDE	CVAA	DCP
	Nitrosodiphenylamine												
99.	Phenanthrene		5	0.05									
100.	Pyrene		10	0.05									
101.	1,2,4-Trichlorobenzene	1	5										
102.	Aldrin	0.005											
103.	α-BHC	0.01											
104.	β-BHC	0.005											
105.	γ-BHC (Lindane)	0.02											
106.	δ-BHC	0.005											
107.	Chlordane	0.1											
108.	4,4'-DDT	0.01											
109.	4,4'-DDE	0.05											
110.	4,4'-DDD	0.05											
111.	Dieldrin	0.01											
112.	Endosulfan (alpha)	0.02											
113.	Endosulfan (beta)	0.01											
114.	Endosulfan Sulfate	0.05											
115.	Endrin	0.01											
116.	Endrin Aldehyde	0.01											
117.	Heptachlor	0.01											
118.	Heptachlor Epoxide	0.01											
119-125	PCBs (h)	0.5											
126.	Toxaphene	0.5											
	Chlorpyrifos (c)												
	Diazinon (c)												
	Tributyltin (c)												

Notes:

- a.) According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1) Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.
- b.) Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); DCP = Direct Current Plasma.
- c.) The SIP does not contain an ML for this constituent.
- d.) For copper, the discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.
- e.) Use ultra-clean sampling and analytical methods for mercury monitoring per 13267 letter issued to Discharger. ML for compliance purposes is as listed in table above until the SWRCB adopts alternative minimum level. (see 2000 SIP Appendix 4)
- f.) The discharger does not need to sample for this constituent because sampling is not required for receiving waters with a municipal beneficial use designation.
- g.) Phenol by colorimetric technique has a factor of 1.
- h.) PCBs refers to PCB 1016, 1221, 1232, 1242, 1248, 1254 and 1260.
- i.) If no ML value is below the effluent limitation, the discharger shall select the lowest ML, listed in Appendix 4 of the SIP.

- j.) When the discharger uses a method whose quantification practices are not consistent with the definition of an ML, such as USEPA approved method 1613 for dioxins and furans, the discharger, the RWQCB and the SWRCB shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.

13. Nitrogens.

- a. The parameter 'Nitrogens' in this SMP means all of the following parameters:
Ammonia Nitrogen, Nitrate Nitrogen, and Total Organic Nitrogen.
- b. Analytical results for the above nitrogen parameters shall be reported as: mg/L as nitrogen.

14. River Flow & Discharge Dilution.

- a. River flow rate shall be measured at least daily during river discharge. Measurement is only required at one monitoring station on the river. The monitoring station used for river flow monitoring shall be identified in the Monthly Report, and in the Annual Report.
- b. The Discharge Dilution ratio (river water to wastewater) shall be reported on a daily basis.

15. Precipitation Monitoring.

- a. Precipitation (rainfall) shall be monitored in order to characterize and document seasonal and monthly rainfall for the discharger's treatment plant and service area.
- b. Rainfall shall be monitored at least one station within the discharger's service area. The name and location of the station used shall be reported.
- c. Monthly total rainfall (inches) shall be reported for each calendar month.

16. Standard Observations

- a. *Wastewater Effluent* (E stations):
- (1) Floating or suspended material of waste origin (eg, oil, grease, algae, and other macroscopic particulate matter): Presence or absence; if present, description of any materials observed.
 - (2) Nuisance Odors: Presence or absence; If present: description, apparent source(s), and distance of travel.
- b. *Perimeter of wastewater treatment facility* (P stations):
- (1) Nuisance Odors: same as a.(1) above.
 - (2) Weather conditions:
 - (a) General characterization (e.g., sunny, cloudy, rainy);
 - (b) Air temperature
 - (c) Wind: Direction and estimated velocity.
- c. *Wastewater Pond Levees* (L stations):
- (1) Freeboard (feet)
 - (2) General conditions (e.g., note any seepage, levee bank erosion or deterioration, etc.)
- d. *Receiving Waters* (C stations):

VI. SPECIFICATIONS for SAMPLING, ANALYSES and OBSERVATIONS (continued)**17. Overflows.****a. *Location, Time and Volume.***

For each overflow event report: Location, date and time overflow started, dated and time overflow stopped, total duration, and estimated total overflow volume.

b. *BOD & Coliform Sampling.*

For any overflow event which involves discharge of wastewater to any surface water, grab samples shall be taken and analyzed for BOD, and Total Coliforms.

c. *Reporting.*

Reporting requirements for overflows are described in SMP Section VII.E. below.

18. Treatment Process Bypass Monitoring.

During any time when bypassing of any treatment process or unit occurs, such that all wastewater does not receive full secondary treatment and the monitoring program for effluent discharged from the treatment plant shall include the following sampling and analyses in addition to the schedule given in Table 1 of this SMP. This sampling and analysis shall continue for the duration of the bypass event, until return to compliance with effluent limits has been achieved, or until such time as determined appropriate by Regional Board staff.

a. When bypassing primary or secondary treatment processes:

- (1) Composite Samples. Collect composite samples for BOD and TSS analyses, based on composites of hourly grab samples for the duration of the bypass event (any one composite sample not to exceed 24-hour composite); and
- (2) Grab Samples. Collect grab samples at least daily, for pH, Temperature, Dissolved Oxygen, Total Coliform, Settleable Matter and Oil & Grease analyses.

b. When bypassing the disinfection process:

Collect grab samples at least once every two hours for Coliform analyses.

c. When bypassing the dechlorination process:

Collect grab samples at least once every half hour for chlorine residual measurement.

d. When bypassing flow monitoring equipment:

Report estimated Average Flow Rate (MGD), estimated Total Flow Volume (million gallons), and total duration (hours, minutes). The means of flow estimation used shall also be reported.

VII. REPORTING REQUIREMENTS

A. General Reporting Requirements are described in Section E of the Board's "*Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*", dated August 1993.

B. Monthly Self-Monitoring Report (SMR).

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:

1. *Schedule.* The report shall be submitted to the Board by the last day of the following month.
2. *Purpose.* The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the discharger's operation practices.
3. *Letter of Transmittal.*
Each report shall be submitted with a letter of transmittal. This letter shall include the following:
 - (a) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
 - (b) Details of the violations: parameters, magnitude, test results, frequency, and dates;
 - (c) The cause of the violations;
 - (d) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.
 - (e) Signature: The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

4. *Compliance Evaluation Summary.*

Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.

VII. REPORTING REQUIREMENTS (continued)**B. Monthly Self-Monitoring Report (SMR) (continued).****5. *Results of Analyses and Observations.***

(a) Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.

(b) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

(c) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

6. *Data Reporting for Results Not Yet Available.*

The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. The Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR, and the data as well as relevant discussions of any observed violations, shall be included in the next following SMR.

C. Annual Self-Monitoring Program Report (Annual Report).

For each calendar year, an Annual Report of the monitoring program shall be submitted to the Board in accordance with the following.

1. *Schedule.* The report shall be submitted to the Board by February 15 of the following year.

2. *Purpose.* The purpose of the annual report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the discharger's operation practices.

3. *Data Summary.* The report shall include both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.

4. *Treatment Plant Performance Discussion.* The report shall include a comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the discharger's wastewater collection, treatment or disposal practices.

VII. REPORTING REQUIREMENTS (continued)**C. Annual Self-Monitoring Program Report (Annual Report). (continued)**

5. *Facility Diagrams.* The report shall include one or more diagrams showing the dischargers' facility, flow routing and sampling and observation station locations. These diagrams shall be plan view diagrams or maps that are scaled or accurately dimensioned, clearly labeled and with adequate reference points showing orientation and regional location.
6. *Collection System Overflow Summary.* The report shall include a description of each collection system overflow identified during the year. The report shall also include a map of the discharger's collection system service area showing the locations of all overflow points.

D. Spill Reports.

1. A report shall be made of any spill of oil or other hazardous material.
2. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:
 - a. During weekdays, during office hours of 8 am to 5 pm, to the Regional Board:
Current phone number: (510) 622 - 2312.
 - b. During non-office hours, to the State Office of Emergency Services:
Current phone number: (800) 852 - 7550.
3. A written report shall be submitted to the Regional Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall include the following:
 - a. Date and time of spill, and duration if known.
 - b. Location of spill (street address or description of location).
 - c. Nature of material spilled.
 - d. Quantity of material involved.
 - e. Receiving water body affected.
 - f. Cause of spill.
 - g. Observed impacts to receiving waters (eg, discoloration, oil sheen, fishkill).
 - h. Corrective actions that were taken to contain, minimize or cleanup the spill.
 - i. Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.
 - j. Persons or agencies contacted.

VII. REPORTING REQUIREMENTS (continued)**E. Reports of Collection System Overflows.**

Overflows of sewage from the discharger's collection system shall be reported to the Board in accordance with the following:

1. *Overflows in excess of 1,000 gallons.*

Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:

- a. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:
 - (1) Notify the current Board staff case handler, by phone call or message, or by facsimile: [current Regional Board Fax number: (510) 622 - 2460];and
 - (2) Notify the State Office of Emergency Services at phone number: (800) 852 - 7550.
- b. Submit a written report of the incident in follow-up to telephone notification.
- c. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.
- d. The written report for collection system overflow shall include the following:
 - (1) Date and time of overflow start and end.
 - (2) Location of overflow (street address or description of location).
 - (3) Estimated volume of overflow.
 - (4) Final disposition of overflowed wastewater (to land, stormdrain, surface water body). Include the name of any receiving water body affected.
 - (5) Cause of overflow.
 - (6) Observed impacts to receiving waters if any (eg, discoloration, fishkill).
 - (7) Corrective actions that were taken to contain, minimize or cleanup the overflow.
 - (8) Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
 - (9) Persons or agencies contacted.

2. *Overflows less than 1,000 gallons.*

Overflows less than 1,000 gallons shall be reported by written report, as follows:

- a. The discharge shall prepare and retain records of such overflows, with records available for review by Board staff upon request.
- b. The records for these overflows shall include the information as listed in 1.d. above.
 - c. A summary of these overflows shall be submitted to the Board annually, as part of the discharger's Self-Monitoring Program Annual Report.

VII. REPORTING REQUIREMENTS (continued)**F. Reports of Treatment Plant Process Bypass or Significant Non-Compliance.**

1. A report shall be made of any incident where the discharger:
 - a. experiences or intends to experience a bypass of any treatment process, or
 - b. experiences violation or threatened violation of any daily maximum effluent limit contained in this Permit or other incident of significant non-compliance,due to:
 - (1) maintenance work, power failures or breakdown of waste treatment equipment, or
 - (2) accidents caused by human error or negligence, or
 - (3) other causes such as acts of nature.

2. Such incidents shall be reported to the Regional Board in accordance with the following:
 - a. Notify Regional Board staff by telephone:
 - (1) within 24 hours of the time the discharger becomes aware of the incident, for incidents that have occurred, and
 - (2) as soon as possible in advance of incidents that have not yet occurred.
 - b. Submit a written report of the incident in follow-up to telephone notification.
 - c. The written report shall be submitted along with regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.
 - d. The written report for a treatment process bypass shall include the following:
 - (1) Identification of treatment process bypassed;
 - (2) Date and time of bypass start and end;
 - (3) Total duration time;
 - (4) Estimated total volume;
 - (5) Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.
 - e. The written report for violations of daily maximum effluent limits or similar significant non-compliance shall include information as described in section VIII.B. of this SMP.

3. During any treatment process bypass, the discharger shall conduct additional monitoring as described in Section VI.J. of this SMP (Treatment Process Bypass Monitoring). The results of such monitoring shall be included in the regular SMR for the reporting period of the bypass.

VIII. RECORDING REQUIREMENTS - RECORDS TO BE MAINTAINED

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including self-monitoring program requirements, shall be maintained by the discharger in a manner and at a location (eg, wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the discharger for a minimum of three years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

A. Parameter Sampling and Analyses, and Observations.

For each sample, analysis or observation conducted, records shall include the following:

1. Parameter
2. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
3. Date and time of sampling or observation.
4. Method of sampling (grab, composite, other method)
5. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
6. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
7. Calculations of results.
8. Analytical method detection limits and related quantitation parameters.
9. Results of analyses or observations.

B. Flow Monitoring Data.

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

1. Total flow or volume, for each day.
2. Maximum, minimum and average daily flows for each calendar month.

C. Wastewater Treatment Process Solids.

1. For each treatment process unit which involves solid removal from the wastewater stream, records shall include the following:

- a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month; and
- b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

2. For final dewatered sludge from the treatment plant as whole, records shall include the following:

- a. Total volume and/or mass quantification of dewatered sludge, for each calendar month;
- b. Solids content of the dewatered sludge; and
- c. Final disposition of dewatered sludge (point of disposal location and disposal method).

VIII. RECORDING REQUIREMENTS - RECORDS TO BE MAINTAINED (continued)**D. Disinfection Process.**

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

1. For bacteriological analyses:
 - a. Date and time of each sample collected
 - b. Wastewater flow rate at the time of sample collection
 - c. Results of sample analyses (coliform count)
 - d. Required statistical parameters of cumulative coliform values (e.g., moving median or log mean for number of samples or sampling period identified in waste discharge requirements).
2. For chlorination process, at least daily average values for the following:
 - a. Chlorine residual in contact basin (mg/l)
 - b. Contact time (minutes)
 - c. Chlorine dosage (kg/day)

E. Treatment Process Bypasses.

A chronological log of all treatment process bypasses, including the following:

1. Identification of treatment process bypassed;
2. Date and time of bypass start and end;
3. Total duration time;
4. Estimated total volume;
5. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

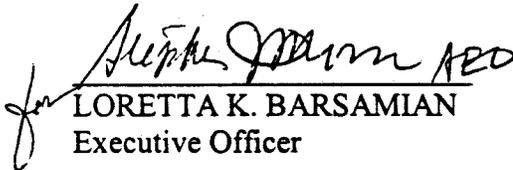
A chronological log of all collection system overflows, including the following:

1. Location of overflow;
2. Date and time of overflow start and end;
3. Total duration time;
4. Estimated total volume;
5. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

IX. SELF-MONITORING PROGRAM CERTIFICATION

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. 2000 – 131.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of November 29, 2000.


LORETTA K. BARSAMIAN
Executive Officer

Attachment: Map of Monitoring Station Locations

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1515 Clay Street, Suite 1400

Oakland, California 94612

FACT SHEET

NOVEMBER , 2000

**REISSUANCE OF
WASTE DISCHARGE REQUIREMENTS
FOR DISCHARGE TO STATE WATERS
FOR**

City of Calistoga, Wastewater Treatment Plant, Napa County

NPDES No. CA0037966

ORDER 00-131

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I. FACILITY DESCRIPTION

1. The City of Calistoga (discharger) owns and operates the municipal wastewater treatment facility located at the Dunaweal Wastewater Treatment Plant south of the city of Calistoga, Napa County. The facility provides tertiary-level treatment of municipal wastewater from domestic and commercial sources within the City of Calistoga.

In addition, the discharger is currently upgrading the facility and construction is expected to be completed in August 2002. The existing and future processes are further described in the Treatment Process Description.

2. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharger as a minor discharger.

II. PURPOSE OF ORDER

3. This NPDES permit regulates the discharge of treated wastewater to Napa River, waters of the State and the United States. This discharge was previously governed by Waste Discharge Requirements that are specified in Order No. 92-062, adopted on June 17, 1992.

III. TREATMENT PROCESS DESCRIPTION

Existing System

4. The treatment process currently includes a headworks; primary clarification; secondary treatment by two oxidation ponds; tertiary treatment by coagulation, clarification and filtration; disinfection; and disposal either to reclamation or to the Napa River. The Discharger's treatment plant has a current permitted treatment flow capacity of 0.70 million gallons per day (mgd), based on a 3-month dry weather average daily flow (DWADF). Treated effluent is discharged to a non-tidal reach of the Napa River through two submerged outfalls extending from the eastern bank of the river, both located at 38° 33' 34" North Latitude, and 122° 33' 28" West Longitude. Outfall E-1 is used for discharge of tertiary-treated effluent, with a river to wastewater dilution of at least 10:1, or for discharge of secondary-treated effluent, with a river to wastewater dilution of at least 50:1. Outfall E-2 is used only for discharge of secondary-treated effluent, with a river to wastewater dilution of at least 50:1.

Future System

5. The purpose of the improvements is to ensure continued adequate and reliable treatment and management of current and anticipated future wastewater flows. The project includes replacement of existing older equipment and process units, and construction of new facilities. The new plant will use an extended aeration activated sludge treatment process for primary and secondary treatment, replacing the existing primary clarification and facultative lagoon (aka oxidation pond) system. The new process requires less land area than the existing pond system, allowing conversion of existing ponds for use as effluent storage and flow equalization. The new plant will continue to include tertiary filtration and disinfection processes. The new plant will continue to provide tertiary quality effluent for reuse by disposal to land in the dry season and discharge to the Napa River in the wet season. Discharges to the Napa River will continue to include tertiary treated effluent when dilution of at least 10:1 is available.

IV. DISCHARGE DESCRIPTION

1. General quality of the effluent discharged from the facility to Napa River during 1994 through June 2000, based on information (see Attachment A – Characteristics of the Effluent Quality) provided in the self-monitoring reports is as follows:

<u>Constituents</u>	<u>Average Monthly Loading</u>	<u>Average Percent Removal</u>
Biochemical Oxygen Demand	762 kg/month	92 %
Suspended Solids	1250 kg/month	90 %

When the new system comes on line the general quality of the effluent may change.

Reclamation Facility

- The discharger currently reclaims dry season effluent and plans to continue to do so. The effluent goes through its respective secondary treatment processes for the existing and future systems. During reclamation for both systems, the effluent goes through filtration after secondary treatment. These discharges to land are presently governed by Water Reclamation Requirements in Order 96-011, adopted by the Board on January 17, 1996. Order No. 96-011 allows discharges of disinfected secondary-treated effluent or tertiary treated water from the facility to industrial parks, golf courses, pasture lands, and ball fields.

Sludge Handling and Disposal

- Existing System* Currently, settled grit is removed from the headworks by a screw-type conveyor, and deposited to bins for off-site disposal. Primary clarifier sludge is pumped to the anaerobic digester for stabilization. Digested solids are dewatered and dried in one of three under-drained on-site sludge drying units. Dried solids are stockpiled in on-site earthen sludge storage beds, and ultimately removed for off-site disposal at an authorized disposal facility.
- Future System* When the new system comes on line, the solids handling and disposal process will be the same.

Wet Weather Flow Handling

- Existing System* Currently, all flow passes through primary clarification and two oxidation ponds. After the flow circulates through the two ponds, the flow is coagulated, filtered, chlorinated, dechlorinated and then discharged to Napa River.
- Future System* When the new facility is constructed, the peak wet weather flow will pass through an extended aeration activated sludge treatment process, and then through tertiary filtration, and disinfection.

V. GENERAL RATIONALE

In general, the purpose of the proposed permit requirements are to protect the beneficial uses of the Napa River and contiguous waters of the San Pablo Bay, as described in the Basin Plan (reference below). The following documents are the bases for requirements contained in the permit, and are referred to under the specific rationale section of this Fact Sheet. In addition to the following documents, recent plant performance and best professional judgment (BPJ) have been used as bases for some requirements.

- Federal Water Pollution Control Act, as amended (hereinafter referred to as the Clean Water Act).
- Federal Code of Regulations, Title 40 - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-131 (hereinafter referred to as 40 CFR specific part number).
- California Toxics Rule, Federal Register, Vol. 65, No. 97, May 18, 2000 (hereinafter referred to as the CTR).
- Water Quality Control Plan, San Francisco Bay Basin, 1995 (Basin Plan).

- e.) State Water Resources Control Board, "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (hereinafter referred to as the State Implementation Plan or SIP), effective April 28, 2000.
- f.) Quality Criteria for Water, EPA 440/5-86-001, 1986 (hereinafter referred to as the Gold Book).
- g.) Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, March 1991 (hereinafter referred to as the TSD).
- h.) National Toxics Rule, 57 FR 60848, December 22, 1992 (NTR).

VI. SPECIFIC RATIONALE

The following section provides a specific rationale for the proposed permit requirements in the Tentative Order:

A. Basis for Prohibitions

Discharge Prohibition A.1. (no bypass or overflow of untreated wastewaters, no discharge of anything other than storm water to storm drains except as provided for bypasses under the conditions stated in 40 CFR 122.41(m) (4) and (n)): The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment facility or from the collection system or pump stations tributary to the treatment facility, is prohibited except as provided for bypasses under the conditions stated in 40 CFR 122.41 (m) (4) and (n).

Discharge Prohibition A.2. (average dry season flow not to exceed 0.70 mgd): The average dry season flow limit shall be increased to 0.84 mgd, upon completion of the planned new treatment plant facilities. Exceedance of the treatment plant's average dry season flow design capacity may result in lowering the reliability of meeting effluent quality requirements.

Discharge Prohibition A.3. (no discharge receiving less than 10:1 dilution or to dead-end sloughs): The Basin Plan prohibits discharges not receiving a least 10:1 minimum initial dilution or to dead-end sloughs (Basin Plan, Chapter 4, Discharge Prohibition No.1)

Discharge Prohibition A.4. (no discharge to Napa River from May 16 through September 30, except when authorized by the EO): Discharge to shallow waters during dry weather (typically from May 16 through September 30) is prohibited.

Discharge Prohibition A.5. This prohibition is based on the Basin Plan and is intended to protect beneficial uses of receiving waters from adverse impacts associated with the discharge of wastewater with an elevated temperature.

B. Basis for Effluent Limitations

B.(i) For wastewater discharges from October 1 through May 15 that receives at least 10:1 dilution from the receiving water body (i.e., river).

Effluent Limitations B.(i)1 and (2). (Conventional Pollutants):

BOD, total suspended solids: These effluent limitations are technology-based, and are unchanged from the existing permit and are based on Chapter 4, Table 4-2 of the Basin Plan.

Settleable matter, oil and grease: These effluent limitations are from the existing permit and are based on Chapter 4 of the Basin Plan.

Residual chlorine: This effluent limitation was in the prior permit, and is from Chapter 4 of the Basin Plan. The discharger may elect to use a continuous on-line monitoring system(s) for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the permit limit.

Effluent Limitation B.(i)3. (85% removal of BOD and TSS): The limitations included are based on Chapter 4 of the Basin Plan, are technology based, and are effluent limitations in the prior NPDES permit.

Effluent Limitation B.(i)4. (pH): This effluent limitation was in the prior permit and is based on Chapter 4 of the Basin Plan. Pursuant to 40 CFR 401.17, effluent limitations under continuous monitoring, the discharger shall be in compliance with the pH limitation provided that both of the following conditions are satisfied: (1) The total time during which the pH values are outside the required range of 6.5-8.5 pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) No individual excursion from the range of pH values shall exceed 60 minutes.

Effluent Limitation B.(i)5. (coliform bacteria): The effluent limitations for coliform bacteria are based on the WQO for total coliform included in Chapter 4, Table 4-2 of the Basin Plan.

Effluent Limitation B.(i)6. (acute toxicity): The basis for the acute toxicity limitation is the Basin Plan (Table 4-4).

Effluent Limitation B.(i)7. (chronic toxicity): The narrative chronic toxicity requirements are based on USEPA and SWRCB Task Force guidance, as well as BPJ. The chronic toxicity limit is a narrative toxicity objective, implemented via monitoring. Numeric test values will be used as toxicity "triggers" to initiate accelerated monitoring and perform a chronic toxicity reduction evaluation (TRE). The narrative limit for accelerated monitoring and triggering a TRE is based on the Basin Plan.

Effluent Limitation B.(i)8. (interim limits): The basis for the interim limits for these constituents is the SIP, the 1995 Water Quality Control Plan for the San Francisco Bay Basin, the existing NPDES Permit (Order # 92-062) effluent limits, and past plant performance. Interim effluent limits are included in this Order for constituents where the observed maximum concentration for the constituent (MEC) exceeds the lowest, adjusted water quality objective or criterion (WQO).

In addition, the Federal Clean Water Act requires that NPDES permits include water quality based effluent limits for constituents that have reasonable potential to cause or contribute to an excursion of the WQO. These limits are intended to protect the beneficial uses of the receiving waters. They are derived from the Basin Plan, Applicable Federal Regulations (40 CFR Parts 122 and 131), the CTR, NTR, and BPJ based on interpretations of the Basin Plan's narrative toxicity objective.

For certain constituents, interim effluent limits are included in this Order and are based on the more stringent of performance based or previous permit limits. Performance based limits are calculated based on the sum of the average plus three times the standard deviation from the 1997 through 2000 data set. Interim effluent limits are designed to assure no further water quality degradation during the development of the TMDLs and site specific objectives.

Salinity Criteria:

The WQO applied is based on the salinity of the receiving waters. The CTR specifies that fresh water criteria apply at locations where salinities of 1 part per thousand (ppt) and below exists 95% or more of the time.

Based on the discharger's salinity data described below, the facility has demonstrated that the discharge point is classified as fresh water according to the salinity definitions in the CTR.

First, the discharger has collected drinking water samples upriver at the water source for the City of Calistoga: Kimball Reservoir. The electrical conductance of the water at the reservoir in June 1999 was 210 umhos/cm. This converts to a salinity value of 0.12 ppt, using the conversion factor from U.S. EPA Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989, page 2-62: 1 ppt salinity = electrical conductance / 1750.

Secondly, the discharger has collected receiving water samples in the Napa River adjacent to the point of discharge at the facility as required by the existing permit, and the results show that 100 % of the time the salinity values of the receiving water are less than 1 ppt. Please see the attached tables documenting the calculated salinity values for both the C-1 and C-2 Napa River receiving water stations. These values meet the fresh water criteria as dictated by the CTR for Napa River adjacent to the Calistoga plant. Analysis of these samples taken at the point of the plant's outfall into the River and approximately 100 feet upstream of the effluent point, show the total dissolved solids (TDS) values are all below 700 milligrams per liter. This is approximately 65 samples. These TDS values can be converted to salinity values by applying the conversion factor from U.S. EPA Standard Methods, 17th edition: 1 ppt salinity = 1 mg/l TDS / 1313.

As discussed in Finding 30. Receiving Water Salinity of the permit and Effluent Limitation Bi(8) of the Fact Sheet, the salinity of the receiving water is fresh, therefore the WQO used is the fresh water criteria

Reasonable Potential:

As specified in 40 CFR 122.44(d) (1) (i), permits are required to include limits for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

The RP analysis involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent. There are two triggers in determining reasonable potential. For the first trigger, the MEC is compared with the lowest applicable WQO, which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a water quality-based effluent limitation (WQBEL) is required.

For the second trigger, if the MEC is less than the adjusted WQO, then the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO, then a WQBEL limit is required. If B is less than the WQO, then a limit is only required under certain circumstances to protect beneficial uses. If a pollutant was not detected in any of the effluent samples and all of the detection limits are greater than or equal to the adjusted WQO, then the background is compared with the adjusted WQO. For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO, numeric WQBELs are required.

The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQOs from the CTR, NTR and USEPA Gold Book.

The RPA analysis is in Attachment 1 and the table below summarizes the RP analysis for the wet season discharge.

Specific Basis For Permit Requirements

CTR #	Requirement	1995 Basin Plan (Table 3-4) (a)	CTR-Human Health (Water & Organisms)
6	Copper	X	
7	Lead	X	
11	Silver	X	
13	Zinc	X	
14	Cyanide	X	
60	Benzo(a)anthracene		X

Notes:

- a.) **Hardness-Adjusted Freshwater Criteria:** The water quality objectives in listed in Table 3-4 of the Basin Plan are adjusted for a site-specific hardness value of the Napa River of 33 mg/l as CaCO₃. This value is the minimum hardness value measured 100 feet upstream of the outfall E-1, gathered over the past three years of river monitoring. The use of the minimum observed hardness value of the receiving water provides the most conservative or most protective fresh water quality objectives for use in the Reasonable Potential Analysis. Please see the Footnotes for Attachment 1.

Interim Limits:

The interim limits are the more stringent of performance based or previous permit limits. The performance based level in this case is the sum of the average value and three times the standard deviation of the data set studied: last three years of effluent monitoring. However, for some of the constituents, interim limits are below the achievable minimum levels attainable by the laboratory methods, therefore for compliance purposes, when the constituent concentration is below the minimum detection level, the discharger is in compliance with the permit.

The following table summarizes the constituents with interim limits for the wet season discharge. Attachment 1 summarizes the performance-based, previous permit, and interim limits for the wet season.

Table 1 - Interim Limits for Discharge (October 1 through May 15) (a, b)

CTR #	Constituent / CTR #	Daily Maximum, µg/L
6	Copper	18.3
7	Lead	4.2
11	Silver	5.3
13	Zinc	60.5
14	Cyanide (c)	8.2
60	Benzo(a)anthracene	6.5

Notes:

- a.) These limits are based on fresh water quality objectives, and are intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
- b.) All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses must be performed using USEPA Method 1631. Metal limits are expressed as total recoverable metals.
- c.) The discharger may demonstrate compliance with this limitation by measurement of weak dissociable cyanide.

C. Basis for Receiving Water Limitations

Receiving Water Limitations C.1. and C.2. These limitations are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter 3 of the Basin Plan. The language in Limitation D.1.e. is meant to implement the bioaccumulation and narrative toxicity objectives found in the Basin Plan (pages 3-2 and 3-4).

Receiving Water Limitation C.3. Temperature Requirement. The basis for these temperature requirements is Chapter 3 of the Basin Plan, in conjunction with the Thermal Plan (SWRCB Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California, September 18, 1975).

Receiving Water Limitation C.4. This limitation is in the existing permit, requires compliance with Federal and State law, and is self explanatory.

D. Pond Specifications

The triggers are specified for odor control. If the triggers are exceeded or if there is an odor nuisance, the facility shall identify and address the issue.

E. Basis for Sludge Requirements

Sludge Requirements E.a. through E.j. These requirements come from the Basin Plan (Chapter 4) and 40 CFR 257 and 503.

F. Basis for Provisions

Provision F.1 and 2. (permit compliance): This provision is based on 40 CFR 122.46. The discharger shall comply with limitations, prohibitions and provisions of the Order. This Order supercedes Order No. 92-062.

Provision F.3. (self-monitoring program) This provision is based on 40 CFR 122.62, 122.63, and 124.5 and Part A, Self-Monitoring Report.

Provision F.4. (standard provisions) This provision is based on the "Standard Provisions and Reporting Requirements" (Standard Provisions). If there are any conflicts between the permit and the Standard Provisions, the permit supersedes the Standard Provisions.

Provision F.7. (acute toxicity): This provision establishes protocol for compliance with the acute toxicity limitation specified in Effluent Limitation B.5 of the Order which is based on the Basin Plan.

Provisions F.8 and 9. (chronic toxicity): This provision requires compliance with chronic toxicity limits and implementation of toxicity reduction evaluations when there is consistent chronic toxicity in the discharge. This requirement is based on the Basin Plan.

Provision F.10. (special study-effluent characterization for selected constituents) The effluent characterization study is based on the SIP. The CTR requires data on 126 constituents on effluent. However, there are 121 constituents listed in Tables 5 and 6 of the Fact Sheet. The permit assesses the dioxin congeners. The sixteen PAH constituents are individually listed and provided with a WQO in the CTR while the Basin Plan sums the sixteen PAH constituents and provides a WQO for the sum. This permit assesses each PAH individually.

Provision F.11 (Submittal and Implementation of a Pollutant Minimization Program (PMP))
The PMP is required by the SIP (Section 2.4.5.1). The goal of the PMP shall be to reduce all potential sources of priority pollutant(s) through pollutant minimization (control) strategies to maintain the effluent

concentration at or below a WQBEL. If the discharger using the new or improved methods finds pollutants present at levels above the new detection limits but below the former analytical quantification limit established, and it is determined the pollutant has reasonable potential to cause or contribute to exceedance of State water quality standards; then in the absence of effluent limits, the Discharger shall implement a pollutant minimization plan to achieve the water quality standards.

Provision F. 13 (Receiving Water Beneficial Use Study and Schedule)

The fecal coliform limit is given based on other receiving water studies performed in close proximity. However to continue using the fecal coliform limit, the discharger must conduct a receiving water study (in accordance with a plan approved by the Executive Officer) to confirm that the use of the fecal coliform limit does not adversely affect the beneficial uses of receiving water.

Provision F.14. (background, ambient water samples): The SIP requires dischargers to take background, ambient water samples upstream from the facility if they are not available. This information is required for the RPA and to determine final effluent limits.

Provision F.15. (special study – dioxin study): The SIP requires minor dischargers to monitor the effluent for seventeen dioxin congeners, once during the dry season and once during the wet season for one year out of a three year period – this is a total of 2 sampling rounds over a 3 year period. The purpose of this monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach. The discharger is also required to investigate the cost-effectiveness of improving solids removal from its discharge.

Provision F.22. (optional mass offset program) This provision is to allow for a mass offset program.

Provision F.23. (change of ownership requirements): This provision is based on 40 CFR 122.61.

Provision F.24. through F.25. (reopener, order expiration and effective date of permit): Provision F. 23 specifies permit expiration after 5 years in accordance with 40 CFR 122.46(a). The other provisions are based on 40 CFR 123.

VI. SELF MONITORING PROGRAM REQUIREMENTS

General Basis

Part A of the monitoring program is a standard requirement in almost all NPDES permits issued by the Regional Board. Most of the requirements are also existing requirements for the discharger. Part A contains definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Board policy. Part B of the monitoring program is specific for the discharger. It defines the stations, constituents, and frequency of monitoring, and additional reporting requirements. Constituents required to be monitored include all parameters for which effluent limitations are specified. This is to allow determination of compliance with permit limits in accordance with 40 CFR 122.44(i).

VII. WRITTEN COMMENTS

Interested persons are invited to submit written comments on these draft Waste Discharge Requirements. Comments to be considered by the Board shall be received by the Regional Board office at the address indicated above by **November 17, 2000, 5:00 pm**. Comments received after this date and time will not be considered in the formulation of final determinations.

VIII. PUBLIC HEARING

The draft Waste Discharge Requirements will be considered by the Regional Board at a public hearing during the Board's regular monthly meeting to be held on November 29, 2000 beginning at 9:30 a.m. The meeting will be held at the California State Building, 1515 Clay Street, Suite 1400, Ground Floor Meeting Room, Oakland, CA 94612.

IX. ADDITIONAL INFORMATION

For additional information on this matter, interested persons should contact James Nusrala of the Regional Board staff at (510) 622-2320 or email address jn@rb2.swrcb.ca.gov.

ATTACHMENT 1

Reasonable Potential Analysis - Metals

CITY OF CALISTOGA
 DRAFT REASONABLE POTENTIAL ANALYSIS
 METALS/CYANIDE/ PHENOL
 NOVEMBER 2000
 (all values in ug/L unless otherwise specified)

Sample Date	As	Cd	Cr	Cu	Pb	Hg	Ni	Sr	Ag	Zn	Phenol	Cyanide
12/23/97	4	< 1	2	5	< 2	< 0.2	4	< 5	< 1	20	< 5	< 3
1/7/98	4	< 1	2	5	< 2	< 0.2	6	< 5	< 1	20	< 5	< 3
1/20/98	12	< 1	2	5	< 2	< 0.2	9	< 5	< 1	30	< 5	< 3
11/25/98	< 4	< 1	5	8	< 3	< 0.2	5	< 10	3	30	< 5	4
1/20/99	5	< 1	5	5	< 3	< 0.2	5	< 10	3	20		
1/27/99	18	< 1	5	10	< 3	< 0.2	5	< 10	3	50	< 5	6
4/12/99		< 0.2		2			3	< 1				
11/17/99	< 4	< 0.2	5	2	< 3	< 0.2	3	< 1	3	20	< 5	
1/26/00	< 4	< 0.2	5	2	< 3	< 0.2	3	< 1	3	30	< 5	6
2/16/00	11	< 0.2	5	15	< 3	< 0.2	3	< 1	3	40	< 5	4
3/29/00						0.0034						
Number of Points	9.00	10.00	9.00	10.00	9.00	10.00	10.00	10.00	9.00	9.00	8.00	7.00
Average (ug/L)	7.33	0.68	4.00	5.90	2.67	0.18	4.60	4.90	2.33	28.89	5.00	4.14
Standard Deviation	5.12	0.41	1.50	4.12	0.50	0.06	1.90	3.93	1.00	10.54	0.00	1.35
Ave + 3SD	22.70	1.92	8.50	18.27	4.17	0.37	10.29	16.69	5.33	60.51	5.00	8.18
Coeff. Variance (CV=0.6, for data sets with less than 10 #s)												
Min (ug/L)	0.60	0.61	0.60	0.70	0.60	0.34	0.41	0.80	0.60	0.60	0.60	0.60
Max detected or, if all ND, and any DL<C, then lowest det. limit (ug/L) (MEC)	4.000	0.200	2.000	2.000	2.000	0.003	3.000	1.000	1.000	20.000	5.000	3.000
Basin Plan Water Quality Objectives (all freshwater)	18.00	0.20	2.00	15.00	NA	0.0034	9.00	1.00	NA	50.00	5.00	6.00
1-hr avg (WQO1): daily avg.	360 ¹	1.124 ²	16 ¹	6.24 ³	19.9 ⁴	2.4 ¹	555 ⁵			45.8 ⁷		22

CITY OF CALISTOGA
 DRAFT REASONABLE POTENTIAL ANALYSIS
 METALS/CYANIDE/ PHENOL
 NOVEMBER 2000

(all values in ug/L unless otherwise specified)

Sample Date	As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Zn	Phenol	Cyanide
4-day avg (WQO4); monthly avg.	190 ¹	0.48 ²	11 ¹	4.59 ³	0.78 ⁴	0.012 ¹	99.8 ⁵			41.4 ⁷		5.2
Instant. Max (WQOj)							1100		0.6 ⁶	170		
24-hr avg. (WQO24)							56			58	500 ⁸	
Municipal Supply ⁹	50	5	50	1000	50	2	100	50	50	5000	1	200
Most stringent Water Quality Objective-C	50	0.48	11	4.59	0.78	2	56	50	0.6	41.4	1	5.2
Is MEC > C?	N	N	N	Y	N	N	N	N	N	Y	N	Y
Background ¹⁰												
Is B > C?	NA-no background											
Reasonable Potential? (Y, N, I=Incomplete)	I	I	I	Yes	Yes ¹¹	I	I	I	Yes ¹¹	Yes	I	Yes
Monthly Avg / Daily Max ug/L (from existing permit)	/ 20	/ 10.7	/ 10	/ 78	/ 23	0.08 / 2	/ 200	/ 50	/ 40	/ 500	/ 1000	/ 52
Interim Limits (Monthly Avg / Daily Max ug/L ¹²)				/ 18.3	/ 4.17				/ 5.3	/ 60.5		/ 8.2

FOOTNOTES for Draft Metals RPA Table

City of Calistoga

November 2000

General

All concentration values (objectives, background, and limits) are in units of micrograms per liter (ug/l).

References

- [a] Water Quality Control Plan for San Francisco Bay Basin, June 21, 1995 ('Basin Plan');
 [b] USEPA's Quality Criteria For Water (EPA 440/5-86-001, 1986) ('USEPA Gold Book');
 [c] National Toxics Rule (Federal Register, Volume 57, Number 246, 22 December 1992, pages 60848+, and 40 CFR Part 131.36(b), 'NTR'), and NTR Amendment (Federal Register, Volume 60, Number 86, 4 May 1995, pages 22229-22237) ('NTR').

Water Quality Objectives (WQOs).

[d] WQO for protection of fresh water aquatic life (FWAL). From Basin Plan, Table 3-4, *Water Quality Objectives for Toxic Pollutants for Surface Waters with Salinities Less Than 5 ppt.* except WQO for selenium is from USEPA Gold Book, and NTR.

1. WQO given in Basin Plan Table 3-4 as numeric values shown.

2. through 7.:

WQO shown is derived from WQO equations given in Basin Plan Table 3-4, and restated below (WQO=Co). WQO equations are based on receiving water hardness, where: $H = \ln$ (hardness in mg/L as CaCO₃). WQO values shown in Table 3 are based on a receiving water hardness of 33 mg/L as CaCO₃. This is the minimum hardness of Napa River receiving water, based on receiving water monitoring station C-1, 100 ft upstream of Calistoga wwtp outfall, for 24 samples, January 1997 through April 2000. (For hardness = 33 mg/L as CaCO₃, $H = \ln(33) = 3.497$.)

Parameter	WQO Equation	WQO Time Period	WQO Value (ug/L)	WQO Equation	WQO Time Period	WQO Value (ug/L)
2. Cadmium	Co = e (0.7852 H - 3.490)	[4-day average]	0.48	Co = e (1.128 H - 3.828)	[1-hr max]	1.124
3. Copper	Co = e (0.8545 H - 1.465)	[4-day average]	4.59	Co = e (0.9422H - 1.464)	[1-hr max]	6.24
4. Lead	Co = e (1.273 H - 4.705)	[4-day average]	0.78	Co = e (1.273H - 1.460)	[1-hr max]	19.9
5. Nickel	Co = e (0.846 H + 1.1645)	[4-day average]	99.8	Co = e (0.846H + 3.3612)	[1-hr max]	555
6. Silver	Co = e (1.72 H - 6.52)	[Instantaneous Maximum]	0.6	(0.8473 H + 0.8604)	[1-hr max]	45.8
7. Zinc	Co = e (0.8473 H + 0.7614)	[4-day average]	41.4	Co = e		

8. Phenol: There is currently no applicable FWAL WQO for phenol. Effluent limit evaluation here is based on the effluent limit for phenol (500 µg/L) given in Basin Plan Table 4-3, *Effluent Limitations for Selected Toxic Pollutants Discharged to Surface Waters*.

FOOTNOTES for Metals RPA Table (continued)

9. WQO for protection of human health (HH). WQO is based on the 1995 Basin Plan, Table 3-5, *Water Quality Objectives for Municipal Supply* (see note 'a' above for reference).
10. Background concentrations for metals do not exist at this time for Napa River Dischargers. A group effort by all Napa River treatment plants is needed to determine upstream Napa River ambient metals calculations for use in effluent limit calculation.
11. Staff reference additional information (application of lead and silver effluent limits in the previous permit, and anti-backsliding) to determine that a water quality-based effluent limit is needed to protect the beneficial uses of the Napa River. (see Step 7 of Section 1.3 of the State Implementation Plan, SWRCB, June 2000)
12. Interim effluent limits are the lower of performance based (Average + 3*Standard Deviation), and existing permit limits.

ATTACHMENT 2

Reasonable Potential Analysis – Polynuclear Aromatic Hydrocarbons (PAHs)

Reasonable Potential Analysis - PAHs

City of Calistoga

Final Effluent, Discharged to Napa River (except where noted)

Sample Date	Sample Source	PAH Constituent Data (All values in µg/L. Constituents listed by code number below.)									
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	
3/23/88	a	< 5	< 10	< 0.2	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 0.5	< 0.5
3/30/88	a	< 5	< 10	< 0.2	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	< 0.5	< 0.5
4/6/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
4/13/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
4/20/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
4/27/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
5/4/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
5/11/88	a	< 2.5	< 5.0	< 0.1	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
12/2/92	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/11/92	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/1/93	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/18/95	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/12/95	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/23/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
4/24/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
11/26/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
11/26/96	d	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/15/97	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/23/97	b	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1/7/98	b	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
11/25/98	b	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1/26/00	b	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2/16/00	c	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Number of Detects		0	0	0	2	0	0	0	0	0	0
Average		2.49	3.58	1.45	1.66	1.51	1.51	1.62	1.51	1.51	1.51
Standard Deviation		1.76	2.53	1.02	0.24	1.07	1.07	1.15	1.07	1.07	1.07
Ave + 3SD		7.78	11.17	4.52	2.38	4.72	4.72	5.06	4.72	4.72	4.72
Ave + 3SD of 92-00 data		NA	NA	NA	6.51	NA	NA	NA	NA	NA	NA
Effluent Data Range		3-10	3-10	2-10	3.6-3.8	25-10	25-10	3-10	25-10	25-10	25-10
DL Range		0.30	0.30	0.20	3.80	NA	NA	NA	NA	NA	NA
MEC (=max detected, or if all ND, and any DL<WQO, then lowest DL)		0.30	0.30	0.20	3.80	NA	NA	NA	NA	NA	NA
Water Quality Objectives											
Water and Organisms ¹		1200		9600	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044
Organisms only ¹		2700	NA	110000	0.049	0.049 ²	0.049	NA	0.049	0.049	0.049
Lowest Water Quality Objective		1200	NA	9600	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044
MEC>lowest WQO?, yes = Y RP		N	NA	N	Y	NA	NA	NA	NA	NA	NA
Background ³											

Reasonable Final Effluent Analysis - PAHs

City of Calistoga

Final Effluent, Discharged to Napa River (except where noted)

Sample Date	Sample Source	PAH Constituent Data (All values in µg/L. Constituents listed by code number below.)															
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene							
Bkgnd>WQO		Background NA															
RP? (Y,N, Id=Ind Det, lo=Ind. Objective, lb=Ind. Background)		No, lb	No, lo, lb	No, lb	Yes	No, lb	No, lb	No, lb	No, lo, lb	No, lb	No, lb	No, lb	No, lb	No, lb	No, lb	No, lb	No, lb
Final or Interim limit (Y/N)		No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Existing Permit Levels		The monthly average of the sum of the 16 individual PAHs as identified by EPA Method 610 must be less than 0.03 ug/l															
Effluent Concentration Allowance																	
Interim Limit		6.5 ⁴															
Sample Sources:																	
1. Water Quality Objective is the California Toxic Rule criteria for Human Health, Risk for carcinogens, for consumption of water and organisms, and organisms only																	
2. Benzo(a) pyrene has an objective for municipal supply, Table 3-5 in the 1995 Basin Plan, of 0.2 ug/L, however the CTR objective is the lowest criteria for this compound																	
3. Background concentrations for organic constituents do not exist at this time for Napa River Dischargers. A group effort by all Napa River treatment plants is needed to determine upstream organic compound levels																	
4. Interim limit is a performance-based limit, using the average plus three times the standard deviation of the 1992-2000 data set.																	

Reasonable Potential Analysis - PAHs

City of Calistoga

Final Effluent, Discharged to Napa River (except where noted)

Sample Date	Sample Source	Dibenzo(a,h)anthracene	Flourene	Flouranthrene	Ideno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
3/23/88	a	< 1.5	< 1.0	< 1.0	< 0.5	< 5.0	< 1.0	< 0.59
3/30/88	a	< 1.5	< 1.0	< 1.0	< 0.5	< 5.0	< 1.0	< 0.59
4/6/88	a	< 0.75	< 0.5	< 0.5	< 0.25	< 2.5	< 0.5	8.69
4/13/88	a	< 0.75	< 0.5	< 0.5	< 0.25	< 2.5	< 0.5	10.9
4/20/88	a	< 0.75	< 0.5	< 0.5	< 0.25	< 2.5	4.3	< 0.3
4/27/88	a	< 0.75	< 0.5	< 0.5	< 0.25	< 2.5	3.9	< 0.3
5/4/88	a	< 1.9	< 0.5	< 0.5	< 0.25	< 2.5	< 0.5	< 0.3
5/11/88	a	< 1.9	< 0.5	< 0.5	< 0.25	< 2.5	< 0.5	< 0.3
12/2/92	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/11/92	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/1/93	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/18/95	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
11/29/95	b	< 2.0	< 2.0	< 2.8	< 2.0	< 2.0	< 2.0	< 2.0
1/23/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
4/24/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
11/26/96	c	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
11/26/96	d	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1/15/97	b	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
12/23/97	b	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1/7/98	b	< 1	< 1	< 1	< 1	< 1	< 1	< 1
11/25/98	b	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1/26/00	b	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2/16/00	c	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Number of Detects		0	0	1	0	0	2	2
Average		1.83	1.62	1.66	1.51	2.49	1.93	2.36
Standard Deviation		1.29	1.15	0.46	1.07	1.76	0.05	0.25
Ave + 3SD		5.71	5.06	3.05	4.72	7.78	2.07	3.12
Ave + 3SD of 92-00 data								
Effluent Data Range		NA	NA	2.80	NA	NA	3.9-4.3	
DL Range		.3-10	.3-10	.3-10	.25-10	.3-10		
MEC (=max detected, or if all ND, and any DL<WQO, then lowest DL)		NA	NA	2.80	NA	NA	4.30	10.90
Water Quality Objectives								
Water and Organisms ¹		0.0044	1300	300	0.0044	NA	NA	960.0000
Organisms only ¹		0.049	14000	370	0.049	NA	NA	11000
Lowest Water Quality Objective		0.0044	1300	300	0.0044			960
MEC>lowest WQO?, yes =Y RP		NA	N	N	NA	NA	NA	N
Background ³								

Reasonable Effluent Analysis - PAHs
City of Calistoga
Final Effluent, Discharged to Napa River (except where noted)

Sample Date	Sample Source	Dibenzof(a,h)anthracene	Flourene	Flouranthene	Ideno(1,2,3-c,d)pyrene	Napthalene	Phenanithrene	Pyrene
	Blkgnd>WQO							
	RP? (Y,N, Id=Ind Det, lo=Ind. Objective, lb=Ind. Background)	No, Id, lb	No, lb	No, lb	No, Id, lb	No, lo, Id, lb	No, lo, lb	No, lb
	Final or Interim limit (Y/N)	No	No	No	No	No	No	No
	Existing Permit Levels							
	Effluent Concentration Allowanc							
	Interim Limit							
	Sample Sources:							

C-2	Water Depths		River Flow	TDS	Electrical Conductance	Salinity
	River	Smple				
Date	Time	(inch)	(cfs)	(field measured)	(calculated)	(calculated)
(a)		(b)	(c)	(mg/L)	(umhos/cm)	(ppt)
1/25/95	No C-2 samples		518.00			
2/14/95	1340	24.00	56.40	120.00	90.00	0.05
3/28/95	No C-2 samples		252.00			
4/19/95	1340	36.00	32.40	250.00	187.50	0.11
5/16/95	1028	24.00	34.00	330.00	247.50	0.14
11/29/95	1343	36.00	1.71	680.00	510.00	0.29
12/28/95	1111	12.00	14.20	220.00	165.00	0.09
1/23/96	No C-2 samples		286.00			
2/28/96	No C-2 samples		207.00			
3/12/96	No C-2 samples		412.00			
4/23/96	1344	24.00	26.00	220.00	165.00	0.09
5/8/96	1328	12.00	12.50	180.00	135.00	0.08
11/26/96	955	12.00	16.86	410.00	307.50	0.18
12/31/96	No C-2 samples					
1/28/97	No C-2 samples					
2/12/97	839	36.00	33.00	180.00	135.00	0.08
3/11/97	901	30.00	11.00	200.00	150.00	0.09
4/8/97	905	24.00	7.70	260.00	195.00	0.11
11/25/97	855	36.00	9.60	340.00	255.00	0.15
12/9/97	910	48.00	76.00	220.00	165.00	0.09
1/7/98	950	24.00	142.00	200.00	150.00	0.09
1/22/98	No C-2 samples				0.00	0.00
2/12/98	1049	24.00	618.00	120.00	90.00	0.05
3/11/98	942	36.00	97.00	260.00	195.00	0.11
4/20/98	1017	12.00	88.00	180.00	135.00	0.08
5/19/98	1100	8.00	25.00	530.00	397.50	0.23
11/18/98	1000	24.00	5.00	550.00	412.50	0.24

C-2	Water Depths		River Flow	TDS	Electrical Conductance	Salinity
	River	Smple				
Date	Time	(inch)	(cfs)	(field measured)	(calculated)	(calculated)
(a)	(b)	(b)	(c)	(mg/L)	(umhos/cm)	(ppt)
12/9/98	1137	24.00	6.00	47.00	210.00	0.09
1/13/99	922	18.00	6.00	10.60	320.00	0.14
2/24/99	No C-2 samples					
3/11/99	940	36.00	24.00	372.00	150.00	0.06
4/14/99	900	24.00	6.00	241.00	150.00	0.06
11/17/99	958	24.00	12.00	3.00	390.00	0.17
12/8/99	929	12.00	6.00	5.00	440.00	0.19
1/12/00	915	24.00	12.00	26.00	460.00	0.20
2/16/00	1032	24.00	12.00		160.00	0.07
3/22/00	1100	12.00	12.00	85.00	200.00	0.09
4/12/00	1045	24.00	12.00	12.00	230.00	0.10
total n, statistics:						
		29.00	29.00	34.00	29.00	29.00
Max		48.00	24.00	774.00	680.00	0.29
Min		8.00	4.00	1.71	120.00	0.05
Average		24.28	11.93	134.03	281.38	0.12
% of Salinity values < 1 ppt:						100%

ATTACHMENT 3

Salinity Analysis

Revised 10/4/00

San Francisco Regional Water Quality Control Board

1515 Clay St., Ste. 1400, Oakland, CA 94612

Main Phone No. 510-622-2300

ABU	Abu-Saba, Khalil	2382	FG	Ghodrati, Farhad	2331	TEM	Mumley, Thomas	2395
BDA	Allen, Blair	2305	SFG	Gladstone, Susan	2352	MYM	Musonge, Martin	2396
RRA	Arebalos, Ray	2307	LG	Gonzales, Lourdes	2365	2351	Napolitano, Michael	2397
R/	Arulanantham, Ravi	2308	BG	Graham, Betty	2358	AWN	Naugle, Alec	2510
FA	Azimzadeh, Farhad	2310	OHR	Hampton-Rice, Olivia	2496	DLN	Nichols, Debbi	2304
JEB	Balch, John	2311	CAH	Hales, Cynthia	2355	RSN	Nonan, Rose	2500
RHB	Balcom, Raymond	2312	KH	Hart, Karen	2398	JBN	Nusrala, James	2320
DIB	Barr, David	2313	KRH	Hart, Kathryn	2356	PRO	Olofson, Peggy	2402
LKB	Barsamian, Loretta	2314	CTH	Headlee, Chuck	2433	JBO	O'Hara, Janet	5681
GWB	Bartow, Greg	2315	FH	Hetzel, Fred	2357	VP	Pal, Vic	2403
MAB	Beesley, Mary Ann	2317	DMH	Hicks, Diana	2506	JP	Patton, Joan	2406
SLB	Berger, Stephen	2345	RH	Hiett, Richard	2359	GP	Perreira, Gayleen	2407
SCB	Bonifacio, Sonny	2322	SAH	Hill, Stephen	2361	JDP	Ponton, James	2492
CEB	Boschen, Christine	2346	DRH	Hopkins, Dale	2362	CWP	Potter, Chris	2392
HB	Bowman, Heather	2321	JCH	Huang, Judy	2363	SR	Raker, Sarah	2377
DCB	Bowyer, Dale	2323	WBH	Hurley, William	2364	MRF	Rembaum-Fox, Michelle	2387
AB	Breaux, Andree	2324	JMJ	Jang, John	2366	KER	Roberson, Keith	2404
MLB	Brockbank, Marcia	2325	BJ	Job, Brad	2400	MBR	Rochette, Michael	2411
GB	Brosseau, Geoff	2326	MEJ	Johnson, Mark	2493	ARU	Rubissow, Ariel	2412
RDB	Brewer, Roger	2374	WJJ	Johnson, Bill	2354	CTS	Scott, Curtis	2414
KB	Brooks, Kathleen	2300	AJ	Jones, Anita	2367	TS	Seward, Terry	2416
WKB	Bruhns, Wil	2327	JEK	Kaiser, John	2368	SES	Sheehan, Shelby	2448
TWB	Butler, Tom	2309	JK	Kapellas, Jeff	2370	EPS	So, Eddy	2418
CDC	Cahee, Clifford	2329	GK	Kathuria, Gina	2378	LS	Spencer, Linda	2420
TLC	Chao, Tehling	2332	RK	Katznelson, Revital	2470	MSC	Sterling-Cahee, Monica	2421
MTC	Chee, Michael	2333	NK	Katyl, Nancy	2408	BLS	Stevens, Brett	2349
CJC	Chou, C. Joseph	2334	MHK	Kazemi, Hossain	2369	ALS	Suer, Anna Lynn	2422
EAC	Christian, Beth	2335	HK	Kifle, Habte	2371	JMS	Sunahara, Jill	2452
VAC	Christian, Vince	2336	LPK	Kolb, Lawrence	2372	KMT	Taberski, Karen	2424
	Cochrane, Steve	2337	JYL	Lam, Johnson	2373	LWT	Tang, Lila	2425
GNC	Collins, Glynnis	2318	RL	Lee, Randy	2375	LMT	Taul, Laurie M.	2508
RJC	Condit, Richard	2338	SRL	Lee, Shin-Roei	2376	OMT	Thomas, Olleita (Marie)	2428
AMC	Crum, Ann	2474	GVL	Leyva, George	2379	CT	Thornton, Carol	2419
LD	Dorn, Linda	2353	KHL	Lichten, Keith	2380	MET	Tryon, Mary	2399
RAD	Duazo, Rico	2340	GAL	Lincoln, George	2381	TT	Tyler, Tobi	2431
AOF	Fagorala, Ade	2342	REL	Looker, Richard	2451	JGU	Uchman, Jolanta	2432
KYF	Fagorala, Kimberlea	2548	STL	Louie, Selina	2383	CV	Villacorta, Claudia	2509
NF	Feger, Naomi	2328	AGL	Lundgren, Anders	2385	GW	Walker, Greg	2437
CSF	Felix, Cecil	2343	SKM	Ma, Sue	2386	JRW	West, John	2438
LCF	Ferguson, Leslie	2344	HM	Madhavan, Harini	2495	DCW	Whyte, Dyan	2441
CRF	Fewless, Carmen	2316	JM	Marshall, Jill	2388	VJW	Williams, Vonnie	2442
ADF	Friedman, Alan	2347	RKM	McMurtry, Richard	2389	BHW	Wolfe, Bruce	2443
	Freeman, Sheryl	2491	JSM	Menack, Julie	2401	JDW	Wolfenden, John	2444
	State Board #(916) 657-2406		SLM	Miles, Lee	2429	MW	Wong, Melinda	2430
	FAX #(916) 653-0428		DAM	Mishek, Dennis	2390	TCW	Wu, Teng-Chung	2445
TRG	Gandesbery, Tom	2348	KM	Moghbel, Keyvan	2391	AKY	Yusufzai, Abdul	2447
PG	Ganguli, Priya	2427	MM	Monroe, Mike	2392			
ANG	Gary, Aleathia	2507	SMM	Moore, Steven	2439		Computer Help Desk	2495
TAG	Geisler, Tom	2350	ECM	Morrison, Elizabeth	2330			
RCG	Gervason, Ron	2351	SIM	Morse, Stephen	2393			

Office of Emergency Services (OES)- After Hour Spill Line 1-800-852-7550

Fax Machines: Main, 622-2460

Executive: 622-2457

Toxics: 622-2464

Wetlands/Planning: 622-2459

DOD: Cleanup: 622-2458

Field Staff Fax: 622-2450

Watershed FAX: 2481

Office Emergency 911
Security 2000
(inform building security of any emergency)

SF Estuary Project 2465
Friends of Estuary 2337
Fuels (UST list/data info) 2332
Habitat Goals Hotline 2454
Reception 2300
Bulletin Board (BBS) 2498
State Garage 286-0901
Storm Water Info Line 2449
Voice Mail 66262
Building Manager 2564

Pager numbers

Arebalos, Ray 729-3357
Pagers:

Field Response Team:
Kazemi, H (Supervisor) 729-3349
Leyva, George 630-4142
Balcom, Ray 729-3348
Taul, Laurie 630-4143

Cellular Phones:
Kazemi, H. (Supv.) 333-1200
Perreira, Gayleen 333-6846
Hiett, Richard 333-1215
Leyva, George 333-1205
Balcom, Ray 333-1208
Taul, Laurie 303-6342

Conference Rooms w/ Phones

Room 14-11 2483
Room 15-03 2484
Room 15-05 2486
Room 15-10 2487
Quiet Room 14-08 2502
Quiet Room 14-13 2482
Executive Room 15-15 2468
Executive Room 15-16 2469

Cleanup Fund UST 1-800-813-FUND
SWRCB Publications (916)657-1247

Technical Library Internet Address
<http://dcwpweb.swrcb.ca.gov>

Web Site: swrcb.ca.gov/~rwqcb2
E-mail: int.@rb2.swrcb.ca.gov
BASIN PLAN-763-3121

BJ Travel Center - 796-8300

National Groundwater Association Membership Office 1-800-546-1058

Guidance Manual - Start at the Source: 1-877-773-7247

STUDENTS

CA	Abbott, Cristina	2409
DB	Brockbank, David	2319
PC	Chiang, Po-Ling	2435
KC	Coates, Kathryn	2446
LC	Converse, Les	2505
RF	Farre, Raul	2426
ECG	Gill, Elisa	2415
EG	Glimme, Eric	2478
JF	Ham, Jeff	2339
BK	Kam, Brian	2306
JK	Ko, Janice	2435
EL	Lawrence, Erin	2360
SRR	Roberts, Sierra	2406
MR	Robinson, Maggie	2505
SR	Rosario, Sheila	2434
MT	Stabbert, Matt	2406
ST	Tatad, Serafin	2478 (NOT FCCC STUDENT)
SAS	Stern, Sue Ann	2426
LV	Vo, Ly	2436
NW	White, Nelia	2480

ATTACHMENT 4

Hardness Analysis

C-1	Date	Time	Water Depths		River Flow	TDS	Electrical	Salinity
			River	Smple				
(a)	(a)	(a)	(inch)	(inch)	(cfs)	(mg/L)	(calculated)	(calculated)
		i'	(b)	(b)	(c)		(umhos/cm)	(ppt)
1/25/95	1310	1	24	12	518	160	120	0.07
2/14/95	1330	2	36	12	56	140	105	0.06
3/28/95	1045	3	36	12	252	180	135	0.08
4/19/95	1325	4	24	12	32	210	157.5	0.09
5/16/95	1015	5	24	12	34	300	225	0.13
11/29/95	1313	6	12	6	2	530	397.5	0.23
12/28/95	1040	7	12	6	14	160	120	0.07
1/23/96	1000	8	12	6	286	200	150	0.09
2/28/96	1050	9	24	12	207	150	112.5	0.06
3/12/96	1355	10	24	12	412	120	90	0.05
4/23/96	1330	11	36	18	26	180	135	0.08
5/8/96	1315	12	12	18	13	180	135	0.08
11/26/96	940	13	24	12	17	220	165	0.09
12/31/96	925	14	72	24	1665	100	75	0.04
1/28/97	904	15	48	24	458	120	90	0.05
2/12/97	820	16	24	12	33	140	105	0.06
3/11/97	852	17	18	8	11	200	150	0.09
4/8/97	853	18	18	9	8	230	172.5	0.10
11/25/97	844	19	18	9	10	300	225	0.13
12/9/97	900	20	24	12	76	160	120	0.07
1/7/98	940	21	24	12	142	160	120	0.07
1/22/98	905	22	24	12	675	150	112.5	0.06
2/12/98	1040	23	24	12	618	140	105	0.06
3/11/98	933	24	18	12	97	210	157.5	0.09
4/20/98	1023	25	12	6	88	170	127.5	0.07
5/19/98	1050	26	8	4	25	170	127.5	0.07

C-1	Date	Time	Water Depths		River Flow	TDS	Electrical Conductance	Salinity
			River	Simple				
			(inch)	(inch)	(cfs)	(field measured)	(calculated)	(calculated)
	(a)		(b)	(b)	(c)	(mg/L)	(d)	(e)
11/18/98	946	27	12	6	5	530	397.5	0.23
12/9/98	1123	28	12	6	57	180	135	0.08

1/13/99	910	29	12	6	11	250	187.5	0.11
2/24/99	1315	30	48	24	774	130	97.5	0.06
3/1/99	930	31	48	24	371	140	105	0.06
4/14/99	850	32	36	6	241	140	105	0.06
11/17/99	947	33	12	6	3	370	277.5	0.16
12/8/99	923	34	12	6	5	320	240	0.14

1/12/00	905	35	12	6	26	350	262.5	0.15
2/16/00	1025	36	24	12	1286	150	112.5	0.06
3/22/00	1050	37	24	12	85	170	127.5	0.07
4/12/00	1036	38	24	12	12	190	142.5	0.08

total n, statistics:			38	38	38	38	38	38.00
Max			72	24	1665	530	398	0.23
Min			8	4	2	100	75	0.04
Average			24	11	228	208	156	0.09
% of Salinity values < 1 ppt:					100%			

CHRONIC TOXICITY - DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.
- C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

- A. The discharger shall perform screening phase monitoring:
 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
 2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
 1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
 2. Two stages:
 - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
 3. Appropriate controls; and
 4. Concurrent reference toxicant tests.
- C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE C 1

CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	(Scientific name) DURATION	EFFECT ENCE	TEST	REFER-
alga	(<u>Skeletonema costatum</u>) (<u>Thalassiosira pseudonana</u>)	growth rate	4 days	1
red alga	(<u>Champia parvula</u>)	number of cystocarps	7-9 days	5
Giant kelp	(<u>Macrocystis pyrifera</u>)	percent germination; germ tube length	48 hours	3
abalone	(<u>Haliotis rufescens</u>)	abnormal shell development	48 hours	3
oyster mussel	(<u>Crassostrea gigas</u>) (<u>Mytilus edulis</u>)	{abnormal shell development; {percent survival	48 hours	2
Echinoderms (urchins - (sand dollar -	<u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u>); <u>Dendraster excentricus</u>)	percent fertilization	1 hour	4
shrimp	(<u>Mysidopsis bahia</u>)	percent survival; growth; fecundity	7 days	5
silversides	(<u>Menidia beryllina</u>)	larval growth rate; percent survival	7 days	5

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. September 1, 1989. Technical Memorandum. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horing, II, D.J. Klem, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

**TABLE C 2
CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS**

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
fathead minnow	(<u>Pimephales promelas</u>)	survival; growth rate	7 day	6
water flea	(<u>Ceriodaphnia dubia</u>)	survival; number of young	7 days	6
alga	(<u>Selenastrum capricornutum</u>)	cell division rate	4 days	6

Toxicity Test Reference:

6. Horning, W.B. and C.I. Weber (eds.). 1989. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Second edition. U.S. EPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-89/001.

**TABLE C 3
TOXICITY TEST REQUIREMENTS FOR STAGE ONE SCREENING PHASE**

REQUIREMENTS	RECEIVING WATER CHARACTERISTICS		
	Discharges to Coast	Discharges to San Francisco Bay ‡	
	Ocean	Marine	Freshwater
Taxonomic Diversity:	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater (†): Marine:	0 4	1 or 2 3 or 4	3 0
Total number of tests:	4	5	3

† The fresh water species may be substituted with marine species if:

- 1) The salinity of the effluent is above 5 parts per thousand (ppt) greater than 75% of the time, or
- 2) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

‡ Marine refers to receiving water salinities greater than 5 ppt at least 75% of the time during a normal water year.

Fresh refers to receiving water with salinities less than 5 ppt at least 75% of the time during a normal water year.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

August 1993

STANDARD PROVISIONS AND REPORTING REQUIREMENTS

For

NPDES SURFACE WATER DISCHARGE PERMITS

A. GENERAL PROVISIONS

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.
2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.
3. Duty to Comply
 - a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.
 - b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.
 - c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]
4. Duty to Mitigate

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood

of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]

5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).
6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.
7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.
8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.
9. Property Rights

This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

The Board or its authorized representatives shall be allowed:

- a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;
- b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;
- c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and

- d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

- a. Violation of any term or condition contained in the Order and Permit;
- b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;
- c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and
- d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. Bypass (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited. The Board may take enforcement action against the discharger for plant bypass unless:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.);
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of

reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

- c. The discharger submitted advance notice of the need for a bypass to the Board. If the discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The discharger shall submit notice of an unanticipated bypass as required by 40 CFR 122.41(l)(6) (24 hour notice), as required in paragraph E.6.d.

The discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation.

14. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

15. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. STANDARD STORM WATER PROVISIONS

These provisions apply to facilities which do not direct all storm water flows to the wastewater treatment plant headworks.

1. The Storm Water Pollution Prevention Plan (SWPP Plan) shall be designed in accordance with good engineering practices and shall address the following objectives:

- a. to identify pollutant sources that may affect the quality of storm water discharges; and
- b. to identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan may be combined with the existing spill prevention plan as required in accordance with Provision E.5. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources which may be expected to add significant quantities of pollutants to storm water discharges, or

which may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

- a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing: the wastewater treatment facility process areas, surface water bodies (including springs and wells), and the discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.
- b. A site map showing:
 - i. Storm water conveyance, drainage, and discharge structures;
 - ii. An outline of the storm water drainage areas for each storm water discharge point;
 - iii. Paved areas and buildings;
 - iv. Areas of pollutant contact with storm water or release to storm water, actual or potential, including but not limited to outdoor storage, and process areas, material loading, unloading, and access areas, and waste treatment, storage, and disposal areas;
 - v. Location of existing storm water structural control measures (i.e., berms, coverings, etc.);
 - vi. Surface water locations, including springs and wetlands;
 - vii. Vehicle service areas.
- c. A narrative description of the following:
 - i. Wastewater treatment process activity areas;
 - ii. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;
 - iii. Material storage, loading, unloading, and access areas;
 - iv. Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharge;
 - v. Methods of on-site storage and disposal of significant materials.
- d. A list of pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

a. **Storm Water Pollution Prevention Personnel**

Identify specific individuals (and job titles) who are responsible for developing, implementing, and reviewing the SWPP Plan.

b. **Good Housekeeping**

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce potential for pollutants to enter the storm drain conveyance system.

c. **Spill Prevention and Response**

Identify areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, cleanup equipment and procedures should be identified, as appropriate. The necessary equipment to implement a clean up shall be available and personnel trained in proper response, containment and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. **Source Control**

Source controls, such as elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling all storm drain inlets with "No Dumping" signs, isolation/separation of industrial from non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. **Storm Water Management Practices**

Storm water management practices are practices other than those which control the sources of pollutants. They include treatment/conveyance structures such as drop inlets, channels, retention/detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. **Sediment and Erosion Control**

Measures to minimize erosion around the storm water drainage and discharge points such as riprap, revegetation, slope stabilization, etc. shall be described and implemented.

g. Employee Training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training should address spill response, good housekeeping, and material management practices. New employee and refresher training schedules should be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorder. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up to date. This results of this review shall be reported in the annual report to the Board on October 1 of each year.

C. SLUDGE MONITORING AND REPORTING

1. When sewage sludge is either sent to a landfill or applied to land as a soil amendment it should be monitored as follows:

- a. Sewage sludge disposal shall be monitored at the following frequency:

Metric tons sludge/365 days	Frequency
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

- b. Sludge shall be monitored for the following constituents:

Land Application: As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn
Municipal Landfill: Paint filter test (pursuant 40 CFR 258)

Sludge-only Landfill: As, Cd, Ni, (if no liner and leachate system)

2. The sludge must meet the following requirements prior to land application. The discharger must either demonstrate compliance or, if it sends the sludge to another party for further treatment and/or distribution, must give the recipient the information necessary to assure compliance.
 - a. **Exceptional quality sludge:** Sludge that meets the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8) is exceptional quality sludge and does not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).
 - b. Sludge used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. It shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality), Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).
 - c. Sludge used for lawn or home gardens must meet exceptional quality sludge limits.
 - d. Sludge that is sold or given away in a bag or other container shall meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached that explains Table IV (see 503.14). The sludge must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

D. TREATMENT RELIABILITY

1. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment disposal and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with this order and permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. All of these procedures shall be described in an Operation and Maintenance Manual. The discharger shall keep in a state of readiness all systems necessary to achieve compliance with the conditions of this order and permit. All systems, both those in service and reserve, shall be inspected and maintained on a regular basis. Records shall be kept of the tests and made available to the Board. [40 CFR 122.41(e)]
2. Safeguard to electric power failure:

- a. The discharger shall, within ninety (90) days of the effective date of this permit, submit to the Board for approval a description of the existing safeguards provided to assure that, should there be reduction, loss, or failure of electric power, the discharger shall comply with the terms and conditions of its Order. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Board.
 - b. Should the Board not approve the existing safeguards, the discharger shall, within ninety (90) days of having been advised by the Board that the existing safeguards are inadequate, provide to the Board and the U.S. Environmental Protection Agency a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the permittee shall comply with the terms and conditions of this permit. The schedule of compliance shall, upon approval of the Board Executive Officer, become a condition of the Order.
 - c. If the discharger already has approved plan(s), the plan shall be revised and updated as specified in the plan or whenever there has been a material change in design or operation. A revised plan shall be submitted to the Board within ninety (90) days of the material change.
3. POTW facilities subject to this order and permit shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

- a. All reports required by the order and permit and other information requested by the Board or USEPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. [40 CFR 122.22(d)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]
3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

- a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
- b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Spill Prevention and Contingency Plans

The discharger shall file with the Board, for Executive Officer review and approval within ninety (90) days after the effective date of this Order, a technical report or a statement that the existing plan(s) was reviewed and updated, as

appropriate, on preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. The technical report or updated revisions should:

- a. Identify the possible sources of accidental loss, untreated or partially treated waste bypass, and polluted drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- b. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Board, after review of the technical report or updated revisions, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of this Order, upon notice to the discharger. If the discharger already has an approved plan(s) he shall update them as specified in the plan(s).

6. Compliance Reporting

a. Planned Changes

The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

b. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance

c. Anticipated Non-compliance

All POTWs must provide adequate notice to the Board of:

- i. Any introduction of new pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants.
- ii. Any substantial or material change in the volume or character of pollutants being introduced into that POTW by an input source at the time of issuance of the permit.

Adequate notice shall include information on the quality and quantity of influent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

d. **Non-compliance Reporting (Twenty-four hour reporting:)**

- i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent information shall be provided orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- ii. The following shall be included as information that must be reported within 24 hours under this paragraph:
 - (1) Any unanticipated bypass that exceeds any effluent limitation in the permit.
 - (2) Any upset that exceeds any effluent limitation in the permit.
 - (3) Violation of a maximum daily discharge limitation for any of the pollutants listed in this permit to be reported within 24 hours.
 - (4) The Board may waive the above-required written report on a case-by-case basis.

F. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.

2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.
3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.
4. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order and permit.
5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:
 - a. an upset occurred and that the permittee can identify the cause(s) or the upset;
 - b. the permitted facility was being properly operated at the time of the upset;
 - c. the discharger submitted notice of the upset as required in paragraph E.6.d.;
and
 - d. the discharger complied with any remedial measures required under A.4.

No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

G. DEFINITIONS

1. Bypass means the intentional diversion of waste streams from any portion of treatment facility.
2. Daily discharge means:

- a. For flow rate measurements, the average flow rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.
 - b. For pollutant measurements, the concentration or mass emission rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.
3. Daily Maximum Limit means the maximum acceptable daily discharge. For pollutant measurements, unless otherwise specified, the results to be compared to the daily maximum limit are based on composite samples.
 4. DDT and Derivatives shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE), and DDE.
 5. Duly authorized representative is one whose:
 - a. Authorization is made in writing by a principal executive officer or ranking elected official;
 - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - c. Written authorization is submitted to the USEPA Region 9. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and USEPA Region 9 prior to or together with any reports, information, or applications to be signed by an authorized representative.
 6. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.
 7. HCH shall mean the sum of the alpha, beta, gamma (Lindane), and delta isomers of hexachlorocyclohexane.
 8. Inadequately Treated Waste is wastewater receiving partial treatment but failing to meet discharge requirements.
 9. Incompatible pollutants are:

- a. Pollutants which create a fire or explosion hazard in the POTW;
 - b. Pollutants which will cause corrosive structural damage to the POTW, or wastewaters with pH lower than 5.0 pH units, unless the facilities are specifically designed to accommodate such wastewater;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen-demanding pollutants (e.g., BOD) released into the wastewater system at a flow rate and/or pollutant concentration which will cause interference with the POTW.
 - e. Heat in amounts which will inhibit biological activity in the POTW and result in interference, or heat in such quantities that the temperature at the POTW treatment plant exceeds 40°C (104°F) unless the works is designed to accommodate such heat or the Board approves alternate temperature limits.
10. Indirect discharger means a non-domestic discharger introducing pollutants into a publicly owned treatment and disposal system.
 11. Initial dilution is the process which results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.
 12. Mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \left(\sum_{i=1}^N Q_i C_i \right)$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \left(\sum_{i=1}^N Q_i C_i \right)$$

In which 'N' is the number of samples analyzed in any calendar day. 'Q_i' and 'C_i' are the flow rate (MGD) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' grab samples which may be taken in any calendar day. If a composite sample is taken, 'C_i' is the concentration measured in the composite sample and 'Q_i' is the average flow rate occurring during the period over which samples are composited. The daily concentration measured over any calendar day of all constituents shall be determined from the flow-weighted average of the same constituents in the combined waste streams as follows:

N

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t} (\sum_{i=1}^N Q_i C_i)$$

In which 'N' is the number of component waste streams. 'Q' and 'C' are the flow rate (MGD) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' waste streams. 'Q_t' is the total flow rate of the combined waste streams.

13. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in paragraph above, using the effluent concentration limit specified in the order and permit for the period and the specified allowable flow. (Refer to Section C of Part A of Self-Monitoring Program for definitions of limitation period)
14. Overflow is defined as the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g. through manholes, at pump stations, and at collection points) upstream from the plant headworks or from any treatment plant facilities.
15. POTW means Publicly Owned Treatment Works.
16. POTW Removal efficiency is expressed as the percentage of the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities. Removal efficiencies of a treatment plant shall be determined using monthly averages of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 X [1 - (Effluent Conc./Influent Conc.)]

When preferred, the discharger may substitute mass loadings and mass emissions for the concentrations.
17. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the USEPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.
18. Sludge means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from, or created in wastewater by the unit processes of a treatment system. It also includes but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow/underflow in the solids handling parts of the wastewater treatment system.
19. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

20. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.
21. Total Identifiable Chlorinated hydrocarbons (TICH) shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, PCBs and other identifiable chlorinated hydrocarbons.
22. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass or overflow. It does not mean economic loss caused by delays in production.
23. Untreated waste is defined as raw wastewater.
24. Upset means an exceptional incident in which there is unintentional temporary noncompliance with effluent technology based permit limitations in the order and permit because of factors beyond the reasonable control of the discharger. It does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
25. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION NO. 74-10

POLICY REGARDING WASTE DISCHARGERS RESPONSIBILITIES TO DEVELOP
AND IMPLEMENT CONTINGENCY PLANS TO ASSURE CONTINUOUS OPERATION OF
FACILITIES FOR THE COLLECTION, TREATMENT AND DISPOSAL OF WASTE

WHEREAS, this Regional Board has adopted policies and requirements stating its intent to protect the beneficial water uses within the San Francisco Bay Region and prohibiting the discharge of untreated or inadequately treated wastes; and

WHEREAS, conditions including process failure, power outage, employee strikes, physical damage caused by earthquakes, fires, vandalism, equipment and sewer line failures, and strikes by suppliers of chemicals, etc. or maintenance services can result in the discharge of untreated or inadequately treated wastes; and

WHEREAS, the development and implementation of contingency plans for the operation of waste collection, treatment and disposal facilities under such conditions should insure that facilities remain in, or are rapidly returned to, operation in the event of such an incident and measures are taken to clean up the effects of untreated or inadequately treated wastes.

NOW, THEREFORE BE IT RESOLVED, that this Regional Board will require each discharger as a provision of its NPDES Permit to submit within 120 days after the adoption of the permit a contingency plan acceptable to the Regional Board's Executive Officer to include at least the following:

- A. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.
- B. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operation of sewerage facilities.
- C. Provisions of emergency standby power.
- D. Protection against vandalism.
- E. Expeditious action to repair failures of or damage to equipment and sewer lines.
- F. Report of spills and discharges of untreated or inadequately treated wastes including measures taken to clean up the effects of such discharges.
- G. Programs for maintenance replacement and surveillance of physical condition of equipment, facilities and sewer lines.

BE IT FURTHER RESOLVED, pursuant to Sections 13267 and 13268, dischargers with NPDES Permits now in effect are required to develop and submit a contingency plan as described above, by December 1, 1974.

BE IT FURTHER RESOLVED, that the discharge of pollutants in violation of an NPDES Permit where a discharger has failed to develop and implement a contingency plan as described above will be the basis for considering the discharge a willful and negligent violation of the Permit and action pursuant to Section 13387 of the California Water Code.

BE IT FURTHER RESOLVED, that it is the intent of the Regional Board to eventually require all waste dischargers in the San Francisco Bay Region to develop contingency plans, and those not specifically covered by this resolution are urged to voluntarily develop and implement plans including the above-named elements.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 16, 1974.



FRED H. DIERKER
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

Phone: Area Code 415
464-1255FRANCISCO BAY REGION
1... JACKSON STREET, ROOM 6040
LAND 94607

November 4, 1974

In reply, please refer to
File No. 2390.00(LPK)

ALL WASTE DISCHARGERS

Gentlemen:

Subject: Contingency Plans

The purpose of this letter is to provide guidance to municipal and industrial waste dischargers in the preparation of contingency plans for continuous operation of waste treatment facilities under various kinds of emergency conditions, as called for in Regional Board Resolution 74-10.

A variety of emergency conditions can interfere with normal operation of waste collection and treatment facilities, including natural disasters such as earthquakes; power outages; work stoppages; shortages of necessary chemicals and spare parts; and civil disorders. However, for the purposes of contingency planning the essential needs can be reduced to the following: personnel, chemicals and equipment and power. Plans should recognize that these three necessary elements may be affected singly or in combination.

Personnel

The contingency plan should include provisions for operation of waste treatment facilities when the normal work force is unavailable. Plans for personnel should include the following:

- a. Modified operating procedures for waste treatment facilities using alternate or reduced personnel. This may involve deferred maintenance, shutdown of some units and overload of others to simplify operation; reduced effluent monitoring, and the like may be considered, but only as a last resort.
- b. Identification of individuals capable of handling necessary tasks in keeping treatment facilities operational if normal personnel are unavailable.
- c. Provision for feeding and housing personnel who may be required to work extended hours under emergency conditions, and who may find it necessary to live in the treatment plant. This may involve making funds available for cash purchase of food and other necessary commodities, and fair compensation of personnel for hours worked.

Personnel plans should also consider manpower needs for maintenance of the collection system. Provision should be made for removal of line blockages and maintenance of pump stations.

Another problem to be addressed in personnel plans is strikes against contractors, supplying goods and services related to the treatment process or involved in construction activities. Where appropriate, contractors should have a separate gate, to avoid a situation in which treatment plant personnel would have to cross a picket line to enter the plant.

Chemicals and Equipment

Chlorine and chemicals used for dechlorination are the chemicals of primary concern in municipal waste treatment facilities. A variety of chemicals are used in industrial waste treatment including caustics, acids, lime and polymers. Contingency plans for necessary chemicals should include plans for purchase and transportation of chemicals if primary suppliers and haulers are unavailable.

Consideration should be given to substitution of chemicals where feasible, such as using polymers instead of lime or hypochlorites instead of a liquid chlorine. Where feasible, arrangements should be made for borrowing chemicals from other plants.

Planning for equipment should be directed towards keeping all treatment units in operable condition. This should involve the following:

- a. Plans for maintenance of treatment units. The Board realizes that virtually all treatment plants have detailed maintenance plans, and these need only be summarized.
- b. Plans for spare parts. This would involve identification of parts which are needed frequently, such as chains and sprockets, and making provisions for their prompt replacement when necessary. Such provisions could involve maintenance of a predetermined spare parts inventory, identification of suppliers and inventories on hand with suppliers, and identification of other plants having identical treatment units from whom spare parts could be borrowed as a last resort.
- c. Protection against vandalism of treatment facilities and the collection system, including pump station. Such protection could include surveillance, locks and fences, and good lighting.

Power Supply

The analysis and need for standby power should consider the historic experience with outages of normal power supplies and the impact that these outages had on waste collection and treatment.

Contingency plans for power should include both collection and treatment facilities. For the collection system, provision should be made for operation of pump stations during power outages. This may be accomplished by arranging for availability of portable generators.

For treatment facilities an analysis should be made of the primary power supply and transmission system, to identify possible points of breakdown. Backup systems for power supply and transmission should be identified. Such systems could include portable or stationary generators. If backup systems cannot supply all power needs; plans should be made to achieve optimal performance using the power available.

Additional Measures

Contingency plans should address the possibility of wastes being discharged either untreated or without adequate treatment. Planning for this should include measures to minimize impact on receiving waters whenever possible. This could include plans for release of effluent at favorable times in the tidal cycles.

Plans should also include prompt notification of the Regional Board in the event inadequately treated wastes are discharged.

Please call Dr. Larry Kolb or Roger James if you have any questions.

Sincerely,

FRED H. DIERKER
Executive Officer

FHD/daw

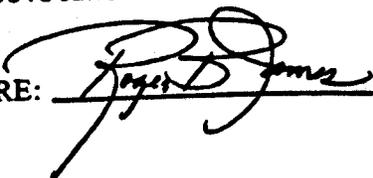
R ONAL WATER QUALITY CONTROL BOAF
SAN FRANCISCO BAY REGION

INTERNAL MEMO File No. 2390.00 (RBJ) vjw

Technical Staff

FROM: Roger B. James
Assistant Executive Officer

DATE: July 20, 1979

SIGNATURE: 

SUBJECT: Waste Discharger Employee Strikes

Many of the municipal employees operating waste treatment facilities belong to unions. Strikes have and will probably continue to be called which have a potential for affecting the operation of the treatment facilities and compliance with waste discharge requirements.

Some of the types of problems that we have experienced include:

- A. Total shutdown of the plants with bypassing of raw sewage.
- B. Prolonged operation using supervisory personnel with minimal maintenance.
- C. Depletion of chemical supplies including chlorine and sulfur-dioxide.
- D. Inability to haul sludge, grit, etc. from the plant site to a land disposal site.
- E. Request for deletion of SMP requirements.
- F. Vandalism to equipment and rumors about the lack of operation to embarrass the municipality.

Area Engineers should be alert to the potential for strikes by determining contact expiration dates and asking whether negotiation problems are anticipated. The following guidance is provided when a strike is anticipated:

- A. Municipality management level personnel should be contacted to ensure that their contingency plan is up-to-date and ready to implement.
- B. The supply of critical chemicals and time required for resupply should be determined.
- C. Points of contact to obtain current information should be established.
- D. Periodic memos should be provided to the EO and AEO on the status and whenever there is a significant change in events.
- E. Letters similar to the attached should be sent to the municipality and union explaining what we expect in terms of operation.
- F. It may well be appropriate for SMP's to be drastically reduced during a strike, but only EO can authorize such a change.
- G. When strike is over send a letter to municipality and any key personnel that operated the plant thanking them for their efforts if there was no significant violation of requirements.